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[*For continuation of "Analysis of Advertisements" see page* lxxxvii.]

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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

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LONDON AND CHANCE.

WHEN will London seriously take in hand the transport question? We do not mean the piecemeal consideration of it, but the whole broad aspect of it. It is utterly wrong to consider Lambeth Bridge, Charing Cross Bridge, Waterloo Bridge, or the projected St. Paul's Bridge without a wide and extended view of the traffic with which they are concerned. As a matter of fact, no great scheme of bridge-building, or embankment improvement, or better town-planning, along the north and south banks of the Thames, ought to be taken in hand until the railway problem is solved. If we go on as we are doing now the time will come when the railway problem will imperatively demand a solution, when we may have been committed to schemes which make it ten times more difficult.

The fact is that, notwithstanding our wonderful progress in many things, and our splendid service in the government of London, both official and voluntary, we are only muddling along in what seems to be our inevitable British fashion. When shall we realise the vast importance of carefully-studied foresight as to city development? The right development of London is doubtless no easy matter to achieve, but we venture to think it would be infinitely less arduous if we would take the study of it in proper sequence and in the order of importance.

The decision to proceed with St. Paul's Bridge appears to us to be a tragic mistake, at all events until its bearing on the traffic problem and future possibilities is far more carefully considered. Is there no power which can evoke some common-sense method of procedure in handling this great problem of London's growth? We have counsellors enough, and brains enough, and yet we are trying to do the right thing in the wrong way.

The other day the President of the Royal Academy aroused some real interest at the Royal Institution when he pointed out the present disgraces and the future possibilities of London. But our complicated system of government, and our lack of a high controlling authority, with power to insist on the wider vision and to dictate the direction that improvements should take, bar the way to right and efficient action. It is surely a matter for wonder that, amongst the numerous able Chairmen of the London County Council, which have included statesmen of the first rank, this initial lack of London has apparently not been realised. Why should this vast congregation of millions be the victims of such mischance and haphazard? We have a right to ask this, and it is the duty of those who wish to work for the public good and are able to do it to help us to reach some order out of the present chaos. The London Society was founded in order that those who have the welfare of London at heart might bind themselves together to promote a sounder and wider vision, not as to mere abstract beauty, but as to the general amenity of London and the well-being of its citizens. No subject which affects such matters is beyond its aims, and so it includes a large number of its ablest citizens and has no party aims, no troublesome politics, no awkward shibboleth; there is no reason why it could not produce and offer the best counsel and the most unbiassed judgment. The time has surely come when this influential body should bestir itself and make the citizens of London realise where they stand in regard to the future of their city. The Society does not exist to pick quarrels with any other body, or to find fault with the many able officials to whom London owes so much. But in this great wide city of London, which contains so much of the finest brain power in the world, we are lacking a right hand to put to profitable use our wonderful powers and opportunities. There is no need to squander millions on doubtful projects, but we can safely affirm that no intelligent man of business is so seriously wanting in forethought of his future and its chances as is the collective body of the citizens of London. We do not permit anyone to run a fried-fish shop in Regent-street, and we have at last given up making pickles and beer in Holborn. Let us, then, avoid pouring a fresh heavy traffic from north to south over such congested areas as the east end of St. Paul's Cathedral.

A correspondent writes:—"Why are the public kept in the dark with regard to matters like the St. Paul's Bridge? We have long been told that this bridge has been proposed, and now we learn that no approach roads have been decided upon. Without approach roads it would be just as useless as Southwark Bridge. Probably when too late the London Society, or some other body, will find that the proposal is one which should be opposed, but with which we are helpless in view of the difficulties thus imposed by officials. If the bridge is to be a success, millions of people will pour across it from north and south. What, then, will happen to the traffic from east and west at the crossings of Cannon-street and Cheapside? It would appear that such a bridge, if successful, would make confusion worse confounded. The whole thing is typical of British officialism—we are kept in the dark until too late for effective opposition. It must now be realised that there is an intelligent public, who are interested in, and capable of understanding, such things, and that they should be taken into confidence in the early stages of the proceedings in view of the growing interest in citizenship."

There is a practical possibility in front of all this. We want, at once, a general controlling body for the whole of London which shall be able to unify all our disjointed and piecemeal effort into one carefully considered. We want all the good counsel we can get, but lectures and exhortations, articles and letters go but a little way. Is it possible that the London Society can be a sort of Baron Haussman, not only to direct a few fine thoroughfares, but to start us off in the right way to have a plan for London which shall forecast something like a right future for our railways, our roads, our bridges, and the thousand other things that make a city both convenient and beautiful?

We cannot believe that the vision of a noble and beautiful city is really a matter of indifference, but every one of us is guilty of some measure of apathy and ignorance.

NOTES.

Fine Arts Commission.

THE appointment of a Fine Arts Commission might be a very good thing, but on the other hand it may not be an unmitigated blessing. There are evils in all control, and we cannot forget the possibility of having to cry to be saved from our saviours. One of the first things the Fine Arts Commission might usefully do is to clear away some of our statues, says Mr. Ralph Knott, who objects, amongst other things, to the Lincoln memorial with its "stupid, ugly chair." The general public who pays any regard to the discussion by artists on such matters must be a little mystified as to whether there is any safe criterion for the assessment of artistic values. Sometimes it is not the statue itself which is so much at fault as its location. One of the most inept choices of site appears to many to be that of the Washington statue dotted down at the corner of the National Gallery. That an accomplished piece of work like this, representing one of the finest characters in recent history, should look so little and undistinguished is a striking object lesson on how not to do it.

Civic Art.

DISTINGUISHED amongst all recent efforts for town improvement is the work of the Birmingham Civic Society, but we imagine one reason of its success is the sympathetic support it receives for its suggestions from the city authorities. This body has now taken up the question of the design of telephone boxes (*see pp.* 186-7), and has suggested an improvement on the design accepted by the authorities, and which could be built at less cost. Opinion will, of course, be divided as to the comparative merits of the designs, but it appears obvious enough that a concrete box of good design might be both better and cheaper than the design accepted. It is said that the cost involved by these boxes may run to half a million pounds.

Culture and City Churches.

WHAT is culture? It may be held that one may be cultured in one particularly exclusive way, but the nobler view of culture is that of a wider vision which takes account of all the civilising influences of a general amenity. Can anyone be truly cultured who limits the value of City churches to their money values and overlooks their historic, artistic and sentimental values? The fight for the City churches would not be so hard if culture were more widespread.

Traffic Difficulties.

THE folly of pouring one big stream of north-to-south traffic over another east-and-west (as is proposed past the east end of St. Paul's) if it can be avoided, is pointed out by Mr. W. J. H. Leverton. This cross stream difficulty is avoided by the Farringdon-street traffic passing under the Holborn traffic which crosses it by a viaduct. This, of course, is seldom possible, but it has been suggested that a viaduct might be formed from the west front of St. Paul's to some point westward, possibly in an axial line between St. Paul's and the Law Courts. This would be a tremendous relief to the congestion of cross traffic at the foot of Ludgate Hill, but it would break through a lot of valuable property. Years ago, however, this might have been foreseen as a splendid and not impossible possibility.

Pictures in Stations.

IT has been suggested by the League of Arts that we might have pictures exhibited in the waiting rooms of our railway stations—surely not a bad idea. But with the evolution of the poster we may find that the best posters might of themselves form attractive and excellent decorations for our stations. There are some modern posters that should appeal strongly to everyone and especially to artists.

Discoveries at Windsor Castle

So much attention is bestowed nowadays on the search for ancient remains and anything on which time has set its halo, that it is not surprising that Mr. R. B. Robertson, Chapter Surveyor at Windsor Castle, had some interesting information to give of such discoveries on the occasion of his lecture, entitled "Odd Bits of Windsor Castle," which was addressed to the members of the Windsor and Eton Scientific and Archæological Society. Various finds to which he referred included particulars of an ancient doorway and door found in the old masonry of the great hall of Henry III. At the same time, whilst roof repairs were being made, an old chimney shaft was brought to light constructed of limestone. Particulars such as the discovery of the East sally port and other details were given which, though small in themselves, have interest archæologically, and may lead to further elucidation of the plan of the earlier thirteenth-century building.

Chelsea Old Church.

AN exhibition, small but full of interest, of eighteenth and nineteenth century water-colour drawings and prints of Chelsea Old Church, with curiosities connected therewith, was held last week in Petyt House, Chelsea. These

Coatbridge War Memorial Competition. Design Placed First.—By MRS. E. B. HUGHE

objects, with others which it is hoped may be given later, are to be housed in a room in the tower of the church, which is to be used as a little museum. The pictures show the church as it was at different times, and illustrate the beautiful monuments it still contains and for which it is deservedly famous. They include that of Sir Thomas More, the great Chancellor, who rebuilt the existing south chapel, and the splendid Dacre monument, 1595, one of the finest specimens of the work of the period. The delightful old church is indeed a treasure house of the monuments of four centuries, memorials of great beauty or historic interest. Chelsea Old Church dates back certainly to the beginning of the fourteenth century and perhaps even to an earlier date, for parts of the chancel are believed to belong to the thirteenth century, some of this work still remaining. The nave and tower, however, were built about 1675 The interior is exceedingly picturesque, and is a bit of Stuart and Georgian London lovingly preserved.

Art and the Public.

THE address on "Art and the Man in the Street," given by Mr. F. Richards at the Conference of Educational Associations, dealt with the abuse of advertisement in a fresh and convincing manner. Speaking of this abuse, he stated, "the serpent is raising its head, even in Parliament-street. Look from the Houses of Parliament towards the Cenotaph and you have as a background of the Cenotaph an advertisement for candles!" The River Thames is another instance of the abuse of advertisement. When we think of the vision which it presents, its natural beauty and impressiveness seen dimly through the darkness of the night, in contrast to the glare of the streets and the violation to any enjoyment of this through the presence of huge illuminated signs so disfiguring to its character, one wonders that it should have been tolerated so long. We trust that the companies interested in these signs will take note of the growing hostility of the public to this usurpation of their rights, and that, following the good example shown in regard to field signs, they will be removed. Smoke-writing Mr. Richards characterised as a most undignified thing, which offends in its disregard for the beauty of atmosphere and sky and its irreverence to what is so dear to others—the unviolated tranquillity of the heavens. We think, however, the designation of the public hoarding as the "poor man's picture gallery" is rather misleading.

"That Messuage."

OTHER people's terminology is unfailingly tedious, and that of the lawyer, archaic and self-satisfied, peculiarly so. The description "that messuage" is irritating, almost unseemly.

Memorial to the Civil Service Rifles. SIR EDWIN LUTYENS, R.A., Architect.

[This memorial, erected in the Square of Somerset House, was unveiled last week by H.R.H. the Prince of Wales.]

At the same time, it is well for an architect to realise that the careful elevations and plans which he submits to a client are normally accepted as equally strange and bewildering. To the layman there is an unfamiliarity about greasy tracing paper, and the little curves where doors open—the sectional details—bear slight relationship to the home foreshadowed. Some architects have attempted to meet this difficulty by submitting sketches, or, more lately, by expensive little models, with a painful resemblance to Swiss chalet toys. Our experience is that an imaginary sketch, however artistic, does not bring conviction; while the lack of scale of a miniature model deprives it of all reality. It is better to rely on the working drawing and to explain it in simple language. In the long run, clients prefer what is authoritative, even if it be a little aloofly professional. "That messuage," however quaint the word, implies a qualified lawyer, and has a more reassuring sound to the owner than the "desirable residence" of the house agent's tag. We may be forgiven our technicalities if we do not allow them to become a fetish.

Repairs to Ancient Buildings.

ONE aspect of the preservation of ancient buildings that is very frequently ignored is the commercial value of these architectural activities to the community. An innkeeper in the neighbourhood of an English ruin will deplore the money spent by the Government upon its upkeep even while he earns his living catering for visitors attracted to the spot for no other purpose than to inspect the monument. It may not be desirable that England should live by her ancient works of art and exalt them into the prominent place such things occupy in some Continental cities, but it should be possible to recognise their monetary value to the community for what it is; a minor and secondary reason for their preservation, but still a valid one. This view seems to be accepted in Scotland, where very general interest and appreciation of the work done by Government on historic buildings has been aroused. To craftsmen the interest of repairs to ancient monuments is largely technical. Construction and appearance have so often been divorced in modern architecture that it is a very great pleasure to see that they are now being reunited in this particular branch.

GENERAL NEWS.

Belgium : Large Building Scheme.

The Commercial Secretary at Brussels (Mr. J. Picton Bagge) informs the Department of Overseas Trade that a large block of flats and offices, with an area of 7,000 sq. yds., are to be erected at a cost approximating 25,000,000 francs.

The plans will not be completed for some six months. In the meantime, United Kingdom firms desiring to offer fittings, furnishings, &c., may obtain the name and address of the company concerned, on application to the Department of Overseas Trade, 35, Old Queen-street, London, S.W. 1. Reference 21611/F.W./G.P. should be quoted.

The Avonmouth Extension.

The contract for the Avonmouth Dock extension at Bristol has been secured by Sir William Arrol & Co., engineers and contractors, of Glasgow and Westminster. The contract is valued at £554,000, and the work will give employment to thousands of men.

Blinded Soldiers as Telephone Operators.

We have pleasure in giving the following communication from St. Dunstan's :—

"It may not be generally known that telephone-operating has been most successfully taught to the blinded ex-Service men at St. Dunstan's. A number of these men have found employment with important business firms and organisations in London and the Provinces, and not a few employers testify to the superiority in many respects of the work of these men to that of a sighted operator hitherto employed. This may be because the efficient management of a busy switchboard demands full concentration and freedom from outward distractions, and here the handicap of blindness becomes a help rather than a hindrance. St. Dunstan's has several fully-trained men ready for vacancies. Perhaps some reader, opening up in new fields, or faced with a necessary change in present arrangements, might like to give a blinded soldier-operator a trial. If so, the authorities of St. Dunstan's headquarters, Regent's Park, London, N.W.1, will be glad to supply full particulars."

St. Dunstan's think, and we quite agree, that it is a case where the building trade may be able to give a helping hand.

"Harlequinade" Pantomime Souvenir Number.

The pantomime souvenir number of *Harlequinade* is full of good things. Those who did not see the recent show should get a copy, they cannot fail to find amusement therein; and at the same time learn what they missed by not attending the performance. Amongst the numerous articles is one entitled "The History of the A.A. Pantomime," an interesting account of its preparation and the difficulties which had to be overcome before its presentation. Included in the number is a double-page plate of original costume design for the production, in the manner, shall we say, of the late Lovat Fraser. Other articles are "Pantomime" verses "Peeps at an A.A. Diary," and the contribution from the Bristol School.

British Industries Fair.

At the forthcoming British Industries Fair, engineering appliances and building material will be shown at the Castle Bromwich Aerodrome, Birmingham, from May 12 to 23.

By a special arrangement between the railway groups and the Department of Overseas Trade, the organisers of the Fair, visitors will be able to make the return journey from anywhere in Great Britain to either Birmingham or London, at a cost of one-and-a-third of the ordinary single fare.

Full particulars and forms of application for space can be obtained from the Secretary, British Industries Fair, Department of Overseas Trade, Old Queen Street, Westminster, S.W. 1.

£1,000,000 Lithuanian Contracts.

According to the diplomatic representative of Lithuania in London, who has just presented his credentials, important openings for British trade may be expected shortly. They purport building a new railway from the port of Memel to Shavli, which will link up with the rail routes to all parts of Russia. Negotiations, we understand, are now in progress with British firms for the construction of this and other lines.

The new line will probably involve orders in Britain for 140 bridges, forty locomotives, 12,000 tons of rails and 800 wagons. It is expected that over £1,000,000 will be spent in this country on employment as a consequence.

COMPETITION NEWS

Hospital in America.

Fifty-one designs were submitted in the recent competition inaugurated by the *Modern Hospital* for a general hospital containing 30 or 40 beds, and the following awards have been made :—

FIG. 9.—**The Cathedral, Mayence.** (*See p* 173.)

FIG. 8.—**The Church of The Apostles, Cologne.** (*See p.* 173.)

First Premium : Messrs. Butler & Rodman, New York; second premium : Mr. John J. Roth, Los Angeles; third premium : Mr. Ernest Hoedtke, Cambridge, Mass.; first honourable mention : Messrs. Cervin & Horn, Rock Island, Ill.; second honourable mention : Mr. L. C. Dillenback, Urbana, Ill.

Ross-Smith Memorial Design.

Designs are invited (they may be submitted up to September 30) for a statue in bronze, and pedestal, in honour of Sir Ross Smith, the Australian airman who, in 1919, with his brother, Sir Keith Smith, and two Australian mechanics, made an aeroplane flight from England to Australia. The cost of the statue, delivered F.O.B. nearest port of embarkation, must not exceed £3,500, and the pedestal, to be executed in Adelaide, is not to exceed £600. First premium, £200; second, £100. Conditions can be seen at *The Builder* offices.

Proposed Municipal Offices, Kent.

The President of the Royal Institute of British Architects has nominated Mr. H. V. Lanchester, F.R.I.B.A., as assessor in this competition.

Newcastle Fire and Police Station.

Newcastle City Council has decided to hold a public competition amongst architects for plans for the proposed new police and fire brigade station on the Marlborough-crescent Market site. Buildings are to cover 2,465 yds., leaving the remainder for an open court yard. Three premiums, amounting in all to £900, will be offered for designs, and an assessor, nominated by the President of the Royal Institute of British Architects and approved by the authority, will be appointed at a fee of £281 10s. to adjudicate. Sending-in day, March 27. In our last issue it was stated that the cost of this work was estimated at £12,500; we believe the cost is likely to be about £125,000.

Other Competitions.

Other competitions still open include the following (the dates given are, first the sending in date, and second the issue of *The Builder* in which full particulars were given) :—Essays on Heating and Ventilating (Mar. 31; Nov. 9, 1923). Holmside Hospital (Feb. 14; Dec. 14, 1923). Industrial Designs (June; Dec. 21, 1923). National Theatre (April 26). Monument to Sir Wilfrid Laurier (April 3; Dec. 14, 1923). Belfast Union Lighting (March; Nov. 9, 1923). Dunfermline War Memorial (March 8; Dec. 28, 1923). Newcastle Concert Hall (March 1; Oct. 26, 1923).

TOWERS AND SPIRES.

By SYDNEY TOY, F.S.A., A.R.I.B.A.

IV.—CHURCH OF THE APOSTLES, COLOGNE.

In the districts of Germany bordering on the Rhine Romanesque architecture during the eleventh, twelfth, and thirteenth centuries developed in a special and particular manner; and this is observable as much in respect to the treatment of the towers over the crossings as in the general arrangement of the plan and disposition of the parts of the church itself. In the opulent and rapidly growing cities of the Rhine, such as Cologne, Worms, and Mayence, the churches were built on a magnificent scale during this period and usually consisted of a nave with its north and south aisles, a transept at either end of the nave, and a choir beyond both the east and west transepts. There was therefore a crossing at the west as well as at the east end of the nave and a tower was built over each of them. These were often flanked by two smaller towers, placed in line with them at the ends of the transepts or somewhat in advance, and the church was thus dignified by a group of six towers, prominence being given to either one or the other of those over the crossings (Fig. 9).

It is now somewhat difficult to ascertain the precise origin of the plan adopted in these churches, but among the archives of the ancient monastery of St. Gall in Switzerland there still exists a plan for a monastery, drawn about A.D. 820, the church of which shows a similar disposition of parts to that developed here. In respect, however, to the methods pursued in the treatment of the crossing and of the tower above it there can be little doubt but that they are based on types existing in Lombardy and in the north of Italy generally. With these types the Germans during the Middle Ages must have been thoroughly well acquainted, thanks to their commercial intercourse with Italy and the numerous military operations they conducted in that country. Doubtless, also, the traditions established by the Cathedral at Aix-la-Chapelle, built by Charlemagne in the eighth century and modelled probably on the Byzantine church of St. Vitale at Ravenna, had their influence on the open development of the crossing and its covering.

Many of the great Rhenish churches have suffered severely in the course of ages from fire and other destroying causes, and much of the work seen to-day is the result of comparatively modern restoration, but the church of the Holy Apostles at Cologne is a typical example of a Rhenish church of the Romanesque period. This church was built during the first half of the thirteenth century and has east and west transepts with a tower over each crossing as described above. The eastern end, in common with the churches of St. Maria in Capitolio and Great St. Martin, both also at Cologne, is triapsal or has an apse at each end of the transept as well as at the east of the choir. The tower stands upon the four great transverse arches of the crossing and is abutted at its base on all sides by barrel vaults, the barrel vaults being interposed between the arches and the semi-domes on the east, north, and south, and between the western arch and the nave vault on the west (Fig. 7). Immediately above the crowns of the transverse arches the tower is brought to octagonal form by means of trumpet-shaped squinch arches, and from this level it is continued upward through one low stage and terminated by an octagonal dome with a small lantern above. The tower therefore for its full height is open to the interior of the church and forms a great lantern over the crossing. Windows are pierced through the walls on the exposed sides between the roofs of the choir, nave, and transept, and corresponding recesses are formed on those sides covered by the roofs, a communicating gallery being continued all round by means of narrow openings between the windows and recesses. Generally the tower over a crossing in a Rhenish church during the Romanesque period appears to have been low and to have been carried above the roof line of the church only sufficiently to allow of a low external gallery with open arcade between that line and the roof of the tower itself; as in this example (Fig. 8) and as seen in the restored eastern tower at Mayence (Fig. 9).

The design of the eastern tower of the church of the Apostles, above noted, deserves especial attention from a constructive point of view. It will be observed, Fig. 7, that the system of abutment surrounding the great arches upon which the tower stands is remarkably powerful, and, if well built, would be of sufficient strength to support a superstructure of very much greater height. And, again, that the supports are so skilfully disposed that the open effect, which it is so desirable the crossing beneath should possess, is in no way impaired. Immediately above the great arches of the crossing the angles are relieved of all pressure, and the weight of all sides of the tower is thrown directly upon the arches themselves, as well as the weight of those sides at the angles, which is received by the squinches and deflected on both sides, as of the other four. The lateral thrusts exerted on the great arches are then received and neutralised by the four barrel vaults behind them, and which abut directly against and form a continuous support to them through the whole of their course from one springing point to the other. These are again retained at the further ends by the semi-domes of the apses and on the west by the vault of the nave. The vertical pressures are transmitted to the four great piers of the crossing.

The tower over the western crossing of this church is square, and is carried up to a considerable height, Fig. 8. At the summit it is finished by four steeply pointed gables, and crowned by a pyramidal spire set diagonally on the apses of the gables and having its sides continued down the junctions at their feet. Spires of this kind were common in Germany at this period, and are seen on the western towers of the cathedral at Andernach, on the tower over the western crossing at Laach, and elsewhere. They are constructed of timber and covered with slate. An example in this country exists on the tower of the church at Sompting in Sussex. The cathedral of Mayence, Fig. 9, dates substantially from the twelfth century, but it had suffered so much from fire and siege in the succeeding ages that considerable restoration became necessary, and was carried out during various periods in the nineteenth century. The tower over the eastern crossing was rebuilt about 1878. But the lower part of the tall tower over the western crossing, seen to the right in Fig. 9, probably represents the early work, though the upper part was restored after a fire in 1767. This work is doubtless of later character than the main body of the building, and is probably contemporary with the nave vault, about 1200. The construction, to the first stage above the roof line of the church, bears a resemblance to that of the tower of the church of the Apostles, but the internal width of this tower is about 10 ft. greater than that at Cologne, the lantern itself higher and the whole design on a more elaborate scale. The squinch arches immediately above the crossing are stilted and are not trumpet-shaped but of several orders, while corresponding blind arches are recessed in the adjacent walls to preserve the continuity of an arcade. The stage above is delicately treated with arches and detached shafts, and the covering over all is a true Gothic vault of eight compartments with ribs springing from shafts in the angles of the tower. This method of vaulting permits of an additional clerestory with windows on all sides, and it is this clerestory which is seen immediately above the roof line of the church in Fig. 9.

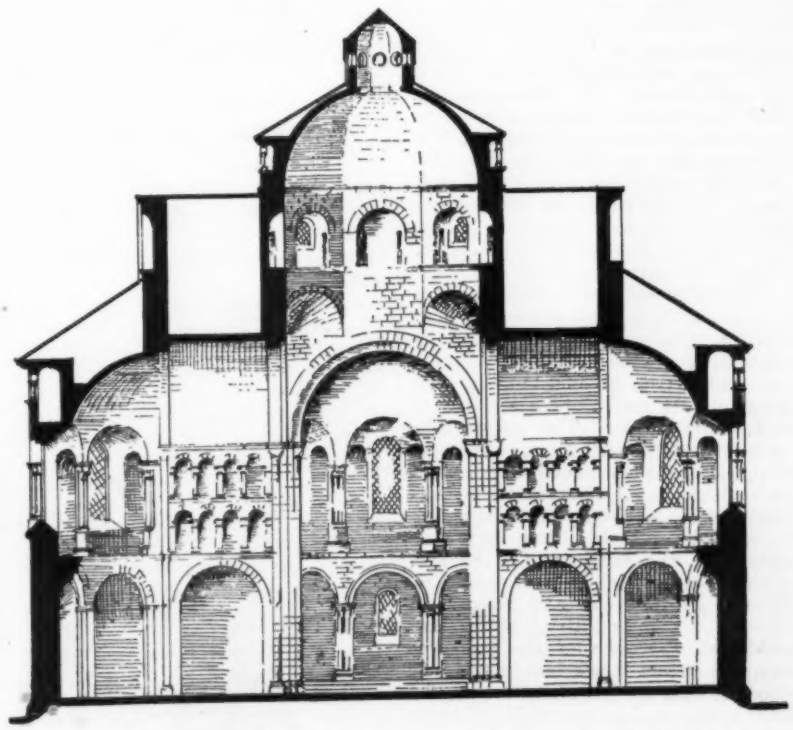


FIG. 7.—The Church of The Apostles, Cologne. Section through the eastern transept and tower.

R.I.B.A. Prizes and Studentships, 1924.

The exhibition of drawings submitted in competition for the R.I.B.A. prizes and studentships, 1924, will be held in Gallery No. VI, at the Royal Academy, and will be open to the public until February 4, 1924, between the hours of 10 a.m. and 6 p.m. Students at the schools of architecture are cordially invited to visit the exhibition.

The prizes will be presented at the general meeting of the R.I.B.A. on Monday, February 4, 1924, at 8.30 p.m., at the Royal Society, Burlington House, W.1. Students are cordially invited to be present at this meeting, at which a criticism of the drawings submitted will be delivered by Mr. Henry M. Fletcher, F.R.I.B.A. No special invitation cards are required.

Manchester Grammar School.

The Governors have decided not to have a competition with regard to plans for the new school buildings to be erected shortly. They have appointed Dr. Percy S. Worthington, F.R.I.B.A., and Mr. Francis Jones, F.R.I.B.A., as their architects for the work.

CORRESPONDENCE.

A Commission of Fine Arts.

SIR,—I rubbed my eyes on opening my paper this morning to be sure I read aright. Was there then really yet another Committee of Taste already formed, and this time under Government auspices, and with grant of public money? And was it the last act of a moribund government to rush this thing through for fear of the views of the new, with its tendency to exchange panaceas for realities? I can only hope that with its greater respect for human liberties it will close down this Fine Arts Commission forthwith. Even in the account which fathers the announcement in a contemporary it is found desirable to adopt a very apologetic tone, as though somewhat ashamed of their own child. We are told that "The Constitution of the Fine Arts Commission saves it from any taint of bureaucracy" (from which it appears that the nature of bureaucracy is not understood) and that the "mature students or practitioners in the arts" are going to set up a standard of Taste. I seem to know the phrase, its iteration is so interminable. The whole trouble is well expressed by G. K. Chesterton when he tells us that "the cultured person does not seem to believe that the ordinary person is fit to be trusted outside a lunatic asylum." In order that this new Commission shall be quite secure, we are told it will itself "suggest the names of those whom it proposes for election or re-election."

But what of the arts themselves? To meet such a danger a "Liberty of the Arts League" seems the thing most needed, and I recall the announcement at the time when the Germans threatened Paris, "Citoyens votre patrie est en danger." If indignation is said to make poets it ought certainly to make artists, for the unconscious assurance of this Commission for the further capture of the freedom of the arts should bring every one of them to their defence. As a distinguished artist, expressing his view to me about it, stated, "the danger of eccentricity and extravagance in modern treatment amidst its new creative developments is nothing to compare with the sterilising influence of this reactionary proposal. We do not want this, no doubt well-intentioned, meddling of men, however distinguished, who are too much out of touch with present feeling and outlook to interpret for us what we need in art, and are too much identified with the old exclusive interpretations and official eminence at such a discount now."

The public and local bodies free to select their own advisers, responsible for their own advisers are much better guides. The recent case of Leeds will be recalled, where a timorous Town Council called in all the directors of all the National Galleries and others, creating out of them a really super-Committee of Taste, with the result that the particular scheme was turned down, and we may trust the Town Council learnt wisdom through the experience. A well-known writer on art pointed out some time ago that these sort of committees are perhaps the least likely to reach a wise decision. There will be found, no doubt, a certain number of accommodating persons to support this Commission, but artists should not, for the bottom is cut of such remedies for the lack of art—if there is the lack. The unfortunate younger artists who are doing much of the best work, but too far off such official detachment, too undistinguished in themselves to be formidable, will perhaps fare badly unless adopting a correct and safe attitude. But they may feel reassured, as the public will, I believe, pay very little attention to a Commission which desires to guide its choice at the present time, and it is a thousand times better that they should not. Those who are going to protect the public from themselves in this way do not recognise that there is a new orientation in the arts, a new springtime of belief about them, and that all this outworn machinery of administering art by those who distrust it is being disintegrated every hour by public opinion.

And what justification is there for the supposition that this Commission will secure for us something better than that which the free exercise of public opinion and choice can secure for us already. Will this Commission manufacture better artists for us, or discover the best ones who resist this patronage and direction by those who do not believe in art enough to trust it? The matter is one much more difficult than any such Commission will resolve, and to suppose that the arts have only to be touched by the magic wand of this body to arrive at better things is to ignore the problems and changes concerned with real improvements. There can never at any time be much done to foster art, which is the flowering of life at its best, and like all the best things, it happens—but not by machinery. Such Commissions begin at the wrong end. Something more than this is required to interpret the spirit of this hour, which is reaching out to better beliefs and means to fly on its own wings, not under the tutelage of a Commission, which will fail, as it deserves and must fail, because it is not related to reality, and to the facts of life.

When the public and artists demand the best out of life, and trust the inspiration of their hearts to realise the kingdom that is within them, art will appear very nigh unto us, as the natural endowment of life directed to the best things. Why cannot we accept life a little more—which we should if we understood it better—and give up these everlasting appeals to machinery for a time. It would liberate us so much more than all this physic—physic, alas! while the physician himself is sick. If only our self-knowledge were greater we should be humbler, and it is through this humbler spirit that the arts will reach their new springtime and not through the coercion which the hard-mouthed would impose.

ISIS.

Prizes and Studentships, R.I.B.A., 1924.

SIR,—May I be permitted to point out several rather misleading statements in the criticism of the designs sent in for the Soane Medallion which appeared in your issue for January 25.

With reference to those drawings signed "Phœnix," each dimension mentioned should be doubled as the drawings are to 1/16 in. scale and not to ⅛ in., as your critic seems to have thought, and only at the sides of the central tower is there a double row of flying buttresses. The same error in dimensions applies, I think, to the winning design also.

PHŒNIX.

Menai Suspension Bridge.

SIR,—In the letter on the proposal to build a reinforced concrete bridge across the Menai Straits, which he apparently broadcasts to a large proportion of the professional and general Press, Mr. Stott only demurred to the scheme on æsthetic grounds. In your issue for January 18 you published photographs of two, in my opinion, graceful reinforced concrete bridges, and as in his letter last week Mr. Stott did not again refer to the question of appearances, I presume I am justified in believing that these illustrations convinced him that it is possible to build "graceful" bridges in this material. He now changes his argument and states that at all events owing to the width and height required (500 ft. by 100 ft.) a ferro-concrete arch is "impracticable." If a ferro-concrete arch were impracticable there would obviously be no need for Mr. Stott or anyone else to worry about one being built, but I have taken the trouble to search the engineering Press and find references to and illustrations of the following reinforced concrete bridges which have actually been built:—New York, 720 ft. clear span, stated to be the largest reinforced concrete arch in the world; Minneapolis, 400 ft. clear span by 98 ft. high; St. Pierre, Rouen, 437 ft. clear span; La Balme, France, 320 ft. clear span. There is now being built at Bernard Loire a reinforced concrete bridge with a clear span of 570 ft., and no doubt there are many other bridges built of this material with a larger span and greater height than are required at the Menai Straits.

Mr. Stott quotes Professor Lethaby to the effect that the subject is too important to be decided by "the poverty of one mind." I quite agree—it is just that feeling which prompts me to reply to Mr. Stott's letters. The progress of science and construction will not be held back by what seems to be nothing but prejudice.

H. C.

London.

Filter Illumination.

SIR,—In regard to the photographs of filter illumination published in your issue of January 4, there is an error which I am sure you and your readers would wish corrected, viz., in place of "Paris Café," p. 4, read "Salon du Goût Français," Champs Elysées, Paris; and on p. 5 the installation illustrated is the Chinese Room, "Ritz-Carlton Hotel," Atlantic City, U.S.A.

At the moment in London there are permanent exhibits of filter illumination at Magnet House, Kingsway, also at Claude Harriss Galleries, 27, Old Bond-street, to which you and your readers are cordially invited.

BEATRICE IRWIN.

Gift for Science.

Cambridge University Senate accepted recently the offer of the trustees of the Rockefeller Foundation of New York, who have offered to furnish £100,000 for the building and general maintenance of the School of Pathology at Cambridge, and to contribute £33,000 toward the endowment of the school, provided the University can secure the remaining £33,000 necessary for the completion of their endowment.

From a photograph by Mr. E. J. Strange, F.I.O.B.

The Home of General Washington, Washington, U.S.A.

THE ARCHITECTURAL ASSOCIATION.

MR. GILBERT H. JENKINS occupied the chair at a general meeting of the Architectural Association, held at No. 35, Bedford-square, W.C.2, on Monday last.

New Members.

After the minutes of the previous meeting had been approved, it was announced that there were seven new nominations for membership, and the following were unanimously elected members:—

G. I. C. Highet	M. J. Evans
G. H. Brown	C. H. Roberts
A. R. F. Anderson	F. B. Armstrong
F. G. J. Place	

PRESERVATION OF OLD BUILDINGS.

MR. BASIL OLIVER, F.R.I.B.A., then gave an address on "The Case for the Preservation of Old Buildings," which he illustrated with a large selection of lantern slides, divided into three categories: (1) Work destroyed; (2) imitative and conjectural restorations, and (3) buildings saved by careful restoration.

In the course of his remarks, he said preservation meant more than saving from demolition; it meant also saving from spoliation by a too drastic and often unsympathetic restoration after old buildings had been made secure from the clutches of the housebreaker. He thought an architect called in to advise about an old building should approach the problem in an entirely different state of mind from that in which he created designs for new buildings. Self-expression was not wanted in dealing with old buildings; highbrows did not always make good repairers, and indeed it sometimes happened that a really good builder, who knew his job and did it without any self-consciousness, did more good for the health of an old building than an architect with an overpowering desire to display his knowledge of styles and dates. It was often obvious what a building used to be like, but that was under no circumstances ever any justification at all for embarking on a scheme of completion. A mere fragment of genuine work gave him more pleasure, as being what it purported to be, than a conjectural restoration which was nothing more nor less than fraudulent misrepresentation.

Too much money was another fruitful source of harm. How little need be done to make the building safe, watertight, and usable (if not a ruin) should be the architect's ideal, not how big a job could one make of this or that restoration. Whoever had the privilege of such work should be conservative, have a "flair" for history, a love of and reverence for old things, but he should beware of too great an antiquarian knowledge. Too knowing and too ardent antiquaries had often been the most mischievous restorers.

In the repair of old buildings he did not think one's own preferences should be considered. Fashions in styles changed; what was considered good to-day might be the reverse to-morrow, and *vice-versa*. For instance, they could tolerate Jacobean work now, but just think of what a number of good Jacobean pulpits and other fittings were swept away and lost for ever during the fanatical period of the Gothic Revival! The misguided restorers of those days were goaded to action by the wave of Romanticism which the writings of Sir Walter Scott engendered.

On the whole he was an optimist about this question. The faithful and continuous work for close on half a century of the Society for the Protection of Ancient Buildings had done more than anything else for the cause of their heritage of old buildings. No less remarkable was the work of the more recent Ancient Monuments Board of H.M. Office of Works, with Mr. C. R. Peers as Chief Inspector and Sir Frank Baines as Director of Works. He knew it was the fashion to criticise Government departments, but he knew nothing but good of the one to which he had referred. In fact, when he heard that an ancient monument had been taken over in perpetuity by the Office of Works he heaved a sigh of relief and knew all was well.

In showing a slide of Kirby Muxloe Castle, where the work of preserving the walls of the gate house had been recently completed, he said careful examination of the walls showed that while the core was generally sound the greater part of the face work was in an advanced state of decay. One of the most serious defects encountered arose from the fact that the entire face of many of the bricks had, by the action of frost, been split from the body of the brick and had fallen away, and that many of the bricks that appeared sound were found, when tested, to be affected also and that the loose portions would fall off when tapped. It was evident that if all the loose faces were removed and the sound parts of the bricks were left in position the appearance of the walls would be ruined, while on the other hand to cut out the whole of the affected bricks and make good with new would mean refacing practically half of the area to be treated.

It was decided, therefore, that an endeavour should be made to retain the loose portions by means of a cementing composition, and the following procedure was adopted. The loose faces were very carefully removed and the fractured surfaces were thoroughly cleaned. The loose portions were then refixed in their original positions by means of a glue cement composed of 4 parts glue, 1 part boiled oil by weight, and 1 part oxide of iron. The adhesive was found to answer its purpose admirably and the result was in every way satisfactory. The presence of the new pointing undoubtedly would assist in the retention in position of the loose portions. The old bricks were very susceptible to the attack of rain and frost. Those lying on flat unprotected positions slipped and cracked into small fragments. No attempt was made to replace those portions of the bricks which had fallen away entirely.

Discussion.

In proposing a vote of thanks to the lecturer, Mr. F. GREEN (President of the Society for the Protection of Ancient Buildings) said during the last century there were very few cathedral churches which did not fall into the hands of Sir Gilbert Scott and other people who restored them by the use of faked work. The Society had done a great deal in educating in the right methods of preservation those responsible for ancient buildings, and that its existence was appreciated was demonstrated by the fact that the clergy were continually applying to it for advice. In its early days it experienced great opposition from the clergy and from architects; but now, he was glad to say, the majority of the members of the Committee of the Society were architects. Very few architects to-day carried on the abominable methods of faking old buildings which was at one time thought to be the proper method of preserving them, as though a modern mason working from drawings could do the same sort of work as the mediæval mason who was carrying out a labour of love into which he put his own individuality and his own ideas, and took a delight in his work.

In seconding the vote of thanks, MR. A. R. POWYS (Secretary of the Society for the Protection of Ancient Buildings said there were a great many different opinions as to the right method of repairing ancient buildings, and undoubtedly a very good argument could be put up for each of them, but it was necessary to consider all the different ideas in an endeavour to find the best treatment for each individual case.

MR. POWELL said the ancient buildings of England were an outward sign of the undercurrent which had kept the workers in touch with nature, and examination of them was more and more revealing how ample a scope that offered for personal experience and invention in work. If it were granted that such inventive handwork was indeed the foundation of any noble national life then the case for preserving every sign of it was proved. Not a thousandth part of the fuss made about modern art was made about the old—to the old artists it was work, and there was nothing to disturb its entirely natural flow. It was abundant everywhere; the people knew the work and no architect's drawings came to confuse and debase their nature-born instincts. He was quite certain that no one who was otherwise educated and intelligent but who had not worked with his hands at building could understand fully why an ancient building was precious. It was astonishing that architects were so seldom put through the workshops of their profession as well as through the offices.

MR. H. B. CRESWELL said within the past five years he had had an actual example of what was going on. In a certain village the spire of the 14th-century church had suddenly taken on an entirely new form. Formerly it was close-jointed ashlar, but he found it was now dark-coloured rubble with very small stones and very large white joints—there were a great deal more joints than stones! The history of the change was that someone called at the rectory and pointed out that the iron lightning conductor was splitting the stone finial, and said that in a short time the stone would break and fall through the roof. The result was that he got the job of renewing the stone. He took it down and took it to a monumental mason, who very industriously copied it in a white sandstone. But before the new stone went up the journeyman mason told the rector that the whole spire needed repairing, and he was entrusted with the work. With no other advice the rector put the work in hand. Of course the very worst methods were adopted—the soft sandstone was scraped wherever it was beginning to rot and decay. One of the most interesting facts of the case was that the rector was a rural dean specially appointed to look after Church property, and the archdeacon to whom he (the speaker) wrote on the subject, replied that he was sure the rector would do nothing improper and took no further action. In some further remarks, the speaker urged architects and other professional men to take care that they did not become absorbed by commercialism. He expressed the opinion that in a very few years, if precautions were not taken, there would be very few architects in private practice, as the bulk of the profession might be employed by large commercial firms to turn out designs. He also urged architects to employ individual craftsmen on all their work.

MR. R. H. MOBERLEY and the CHAIRMAN also spoke.

Congestion of Traffic at Victoria Station.

Several letters have recently appeared in *The Times* drawing attention to the congestion of cab and other traffic at Victoria Station. Mr. W. T. H. Leverton, in a letter published on the 12th ult., makes the practical suggestion that the exits of the Brighton Section on to the Ebury Bridge should also be used as entrances, which could be done by constructing booking offices on the Bridge, thus making the station double-ended. Traffic from the south-west of the station would use the new entrances instead of proceeding up the Buckingham Palace-road to the existing ones, and traffic from the south-east would approach by way of Belgrave-road and avoid the congested Wilton-road. When the platforms of the S.E. and C.R. Section are lengthened, as proposed, they might be approached in a similar manner. Probably a third of the traffic, he considers, would be diverted from the existing entrances.

THE NORTHERN ARCHITECTURAL ASSOCIATION.

ANNUAL DINNER

THE annual dinner of the Northern Architectural Association was held at Newcastle on January 23. The president, Mr. W. T. Jones, occupied the chair. There was a large and representative attendance, but owing to transit difficulties the following were unable to be present and forwarded expressions of regret: Mr. J. A. Gotch, President of the Royal Institute of British Architects; Mr. F. Jones, President of the Manchester Society of Architects; Mr. E. J. Partridge, President of the Society of Architects; Mr. C. McArthur Butler, Secretary of the Society of Architects; Mr. Glen Dobin, President, Liverpool Architectural Association; the Earl of Durham, Lord Mayor of Newcastle; Councillor Stephen Easten, O.B.E.; Mr. A. Keen, hon. secretary, Royal Institute of British Architects; Mr. Ian McAlister, secretary, Royal Institute of British Architects; Alderman A. B. Plummer, J.P.; past President of the Association, and others. Those present included: The Deputy Lord Mayor of Newcastle, Dr. W. Simpson; the Sheriff, Councillor A. W. Lambert; the Mayor of Durham, Councillor E. Laidler; the Mayor of Sunderland, Councillor G. S. Lawson; Sir Theodore Morison, Principal of Armstrong College, Newcastle; Mr. J. S. G. Pemberton, President of the Council of Durham College; Mr. J. W. Alder, President, National Federation of Master Painters and Decorators; Mr. J. P. Allen, F.S.I., President of the Northern Quantity Surveyors' Association; Mr. Thomas Bertram, J.P., President, Newcastle and Tyne District Building Trades Employers' Federation; Mr. A. E. Brookes, O.B.E., M.I.C.E., M.Inst.T., President, County Surveyors' Association; Mr. J. T. Cackett, J.P., hon. treasurer and past President of the Association; Councillor J. Carse, M.B.E., President of the Northern Counties Federation of Building Trades Employers; Mr. J. F. H. Checkley, assistant hon. secretary; Mr. Percy Corder, D.C.L.; Mr. R. Burns Dick, past President; Mr. C. S. Errington, past President; Mr. G. H. Gray, hon. secretary; Mr. W. H. Hope, secretary, Northern Counties Federation of Building Trades Employers; Dr. Harold Kerr, O.B.E., M.A., M.D.; Mr. J. A. E. Lofthouse, chairman of the Tees-side Branch of the Association; Mr. T. R. Millburn, past President; Lieut.-Colonel G. Reavell, O.B.E., Vice-President; Mr. A. Robinson, M.A., D.C.L., Vice-Chancellor of the University of Durham; Mr. W. E. Stairmand, past President of the Northern Counties Federation of Building Trades Employers; Mr. F. N. Weightman, M.A., hon. librarian; Mr. J. B. Wilkinson, immediate past President of the Worshipful Company of Plumbers; Mr. Stephen Wilkinson, A.F.C., President, York and East Yorkshire Architectural Society.

LIEUT.-COLONEL REAVELL, proposing the guests, extended a cordial welcome to the visitors. The world to the architect, he said, was divided into three classes, the client, the architect, and the builder, and they were very glad that all three could meet on a common platform of friendship. It had been said others could beat them for civic architecture, and that the Americans could beat them for commercial architecture, but the domestic architecture of this country was acknowledged as being the finest in the world. He deplored the passing of the time when every well-educated Englishman considered it part of his education to be able to speak learnedly on the style of architecture of his day, and expressed the hope that that time would return.

MR. ROBINSON and COUNCILLOR CARSE responded, following which SIR THEODORE MORISON gave the toast of "The Deputy Lord Mayor of Newcastle, and the Mayors and Corporations of the Province." He said the people of Edinburgh preserved with pride their traces of local history, and it was scandalous to find structures of interest and worth in Newcastle allowed to become begrimed, and being degraded into slums. In regard to the question of the beautification of industrial townships, raised locally by a recent address by Colonel Mitchell, who had proposed the erection of municipal and other buildings on the Town Moor, he hoped the suggestion, if tackled, would have the enthusiastic co-operation of the Northern Architectural Association, and all engaged in town planning.

Responding, DR. SIMPSON referred to the proposed construction of a great new thoroughfare from Low Fell, Gateshead, to Gosforth, through Newcastle, and said local architects could assist in making it a credit to the North. They also hoped to establish Newcastle as the metropolis of the North, and to erect buildings of architectural beauty. The MAYORS of DURHAM and SUNDERLAND also replied.

DR. PERCY CORDER proposed "Architecture," and said by the traditions of English education, the practical teaching of fine art was usually carried on at institutions having no university connection, and, as a result, both schools of art and the universities lost something by the dissociation. By amalgamating with the North of England Society for the Promotion of the Fine Arts 36 years ago, Armstrong College had broken away from that tradition and had established a Department of Fine Art, and had for a considerable period been unique in the country in this respect. Painting, sculpture, crafts, engraving, printing, and architecture were taught there, and he mentioned it was now possible to take architecture as a subject for the Durham University Degree of B.A., by means of a three years' course, or a diploma course of similar duration. The machinery was, therefore, in existence, but for some reason or other no student had yet found it possible to enter for either course. It might be that principals found it difficult to exempt youths from attendance at their offices, but he thought the architectural profession should visualise a succession of young men leaving the University at the age of 20 or 21, having completed the first half of their training, or just past the inter. R.I.B.A. stage, and coming to the architects for two years' part time study, at the end of which the young men would hold either the degree of B.A. with honours, or the diploma of the University in Architecture, whilst at the same time satisfying the requirements of the Royal Institute, and becoming Associates of the Institute. These were the recruits of the profession, and such recruits as a learned profession would have every reason to be proud, and the North-East Coast might very easily, after a few years, find its junior ranks filled with men both with B.A. and R.I.B.A. after their names.

He recognised the self-denying ordinance to which the profession must submit itself, by ceasing to recruit at an early age and, instead, advising entrants to take the course, which had been approved by the R.I.B.A. and rendered possible by the assistance of the Northern Architectural Association and their co-operation with Armstrong College. The period would soon pass, and the profession would find itself with a dignity which was its right. There was never a time when the well-educated, all-round man was more needed in the professions, and he was glad to be able to say as regards the College classes in architecture, that there were now as many men as ever attending the day classes for days per week, whilst the college was taxed to capacity in the evening classes.

So far as the city and neighbourhood were concerned, the accomplishments of local architects gave no fear of adverse comparison with the men of the past, and he instanced several buildings now in course of erection at Armstrong as forming a very noteworthy group.

Dr. Corder, whilst deploring unreasonable multiplication of societies, expressed the need, in a city like Newcastle, for some competent body to serve in an advisory and consultative capacity to the Corporation in the consideration of important public buildings before designs received final approval. He predicted a busy and useful future for their ancient profession in the North of England, and coupled with the toast the names of Mr. Gotch, the first man from the provinces to be elected President of the Royal Institute of British Architects; all allied Societies, and workers for the advancement of art.

THE PRESIDENT, who replied, assured Sir Theodore Morison of the sympathy and assistance of the Northern Architectural Association in the event of the utilisation of the Town Moor for the purpose suggested by Colonel Mitchell, and said he was very strongly in favour of advisory committees to Corporations, and mentioned that the Institute was giving the matter consideration. It seemed very helpful and desirable to have some such body to which a Corporation could refer their architectural questions. He did not suggest that they should, of course, dictate, but merely advise, and at Birmingham such a committee was in operation and rendering excellent work. The whole body of architects was very much interested in education at the present time, and it was generally agreed that it was most necessary for architects to have higher education in the future than in the past. Personally he did not think principals tried to stop pupils attending courses, but rather that the question was one of money, and he thought these students should be encouraged.

Until the man in the street, and the general public, were able to distinguish between good and bad architecture, the profession would never attain to its correct status, but he did not blame the architect for bad architecture, for he had to work to the orders of his clients, and until the latter class was capable of differentiating between the good and the bad, and of choosing the man capable of doing good work, the profession could not soar to its greatest heights. Architecture, probably the oldest of the arts, was the least noticed and appreciated.

THE R.I.B.A. AND THE SOCIETY OF ARCHITECTS.

RECENT reports in the daily press intimate that there may shortly be a closer union between the Society of Architects and the Royal Institute of British Architects. We understand that for some months past negotiations have been proceeding between the Councils of the two bodies, although, it is stated, even if the presiding authorities arrive at some arrangement it will probably be some weeks before anything definite is settled. Before any agreement which might be arrived at by the Councils of the two bodies is put in operation, it would, of course, have to be approved by general meetings of the members.

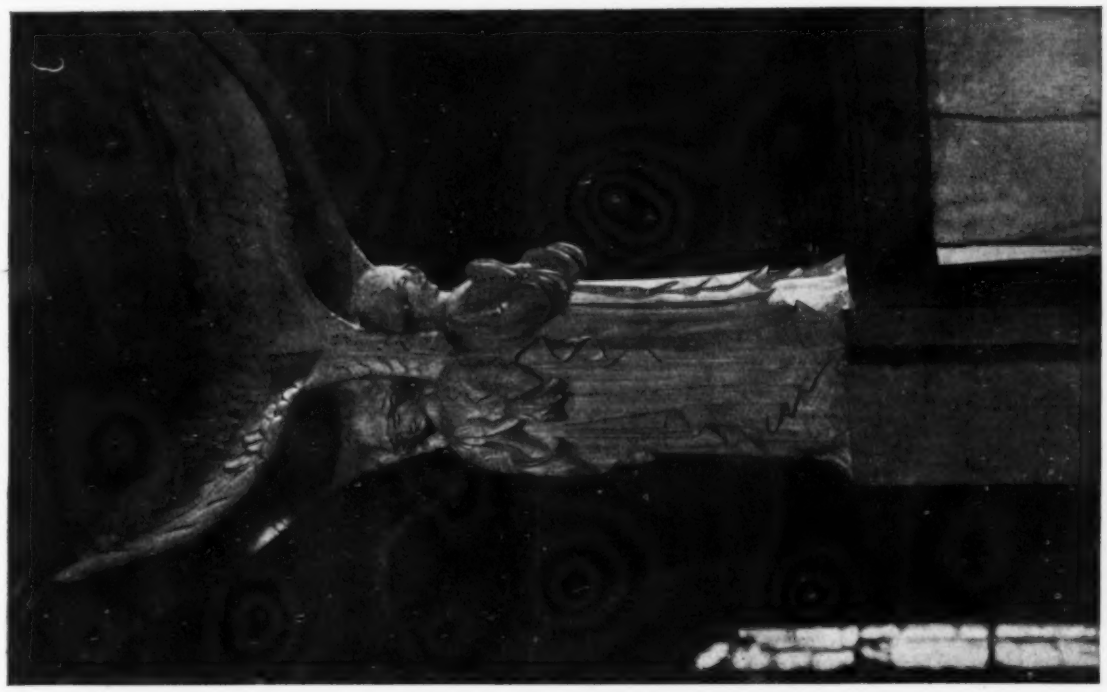
Certain members, it is stated, have strong objections against the proposal. We understand that the terms proposed are similar to those brought forward in 1919. If fusion does take place, a Bill for the registration of members of the profession would, no doubt, be promoted.

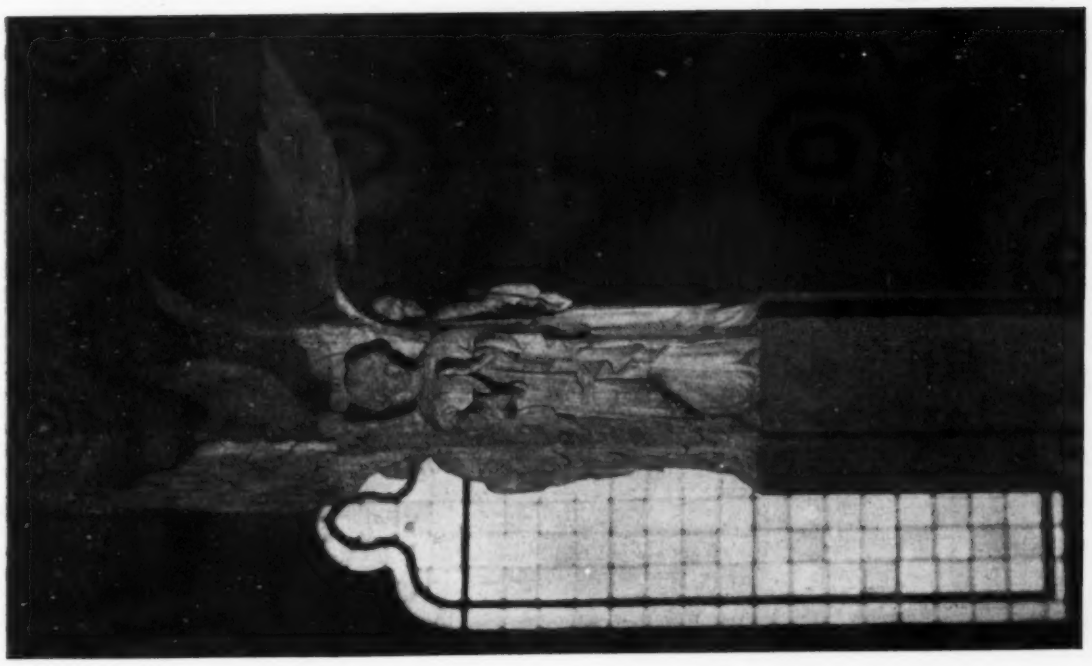
The scheme for fusion was first proposed in 1911, but was rejected by members. From 1919 to 1922 discussions arose, and much electioneering and organising work was done by those who favoured the project.

Books Received.

THE SMALLER HOUSE. (London: The Architectural Press.) Price 25s. net.

ELEMENTARY PRINCIPLES OF REINFORCED CONCRETE CONSTRUCTION. By Ewart S. Andrews (London: Scott, Greenwood & Son.) Price, 7s. 6d. net.





Ciborium Altar War Memorial, St. John the Evangelist, Balham.

MR. A. E. HENDERSON, F.S.A., Architect. (*See p.* 179.)

ITALIAN TRAVEL NOTES.

II.—MILAN AND DISTRICT, WITH BRESCIA.

By THEODORE FYFE.

MILAN is a wonderful place. A cultivated Italian once said to me, "There is nothing at Milan except the Cathedral." This is an extraordinary statement. Rome, Florence, and Venice are unapproachable; but Genoa, Turin or Naples—all first-class towns in point of size—cannot equal Milan in general interest; though there is an atmosphere of eighteenth-century completeness about Turin which some sympathetic student of to-day or to-morrow might do well to cultivate thoroughly.

Apart from its intrinsic value, Milan as a centre is almost unsurpassed in Italy. Rail and tram routes radiate from it to Saronno (Como), Monza (Bergamo), Lodi, Pavia, Abbiategrasso, Novara, and Busto Arsizio, working clock-wise from the north, and omitting the main line, east, to Brescia and beyond. All of these places are well worth visiting.

Let us now examine Milan itself. As all trams radiate from it, we may mention first the Duomo—a gorgeous and remarkably interesting edifice—but there are many other things. The mediæval Castello is a good example of its class. The Great Hospital has one of the finest courtyards in Europe; Santa Maria delle Grazie, besides being a very beautiful church, contains in its refectory the "Last Supper" of Leonardo da Vinci; the Church of San Maurizio (Monastero Maggiore) contains whole walls of frescoes by Luini; San Satiro has the famous octagonal sacristy of Bramante; San Eustorgio, the nobly placed tomb of St. Peter Martyr; and Sant' Ambrogio is a Romanesque basilica of first-class importance complete with its atrium. There are many other churches of interest—the domed Church of Sant' Alessandro*; Santa Maria della Passione, with its octagonal cupola; San Nazaro; and others.

The student will find a great deal in these buildings that he can sketch and measure. He will do well also to study such things as the setting of the "Cenacolo" of da Vinci, which is not only worth going many miles to see in itself, but is part of a great scheme of decoration in a remarkably fine room. He will also do well to visit the Brera, the Biblioteca Ambrosiana, and the Museo Poldi Pezzoli. The Brera is one of the great picture galleries of Europe, with many unforgettable paintings, including perhaps the most beautiful early Raphael in existence.

Coming now to the neighbourhood of Milan, we can get to Como by the line going almost direct north, but first we must stop at Saronno. The village is primitive, but has (or had) a possible inn. The Church of the Santuario della Vergine contains some of the freshest and most delightful early Renaissance work in North Italy. Its truly beautiful dome is a joy. Externally it is polygonal, in delicate coloured marble with a flat-pitched tiled roof and lantern; internally it is circular with arches, spandrels and drum decorated with fifteenth-century arabesques largely on a black ground; frescoes by Luini and Lanini; and above, one of the famous dome paintings of Italy—the heavenly host by Gaudenzio Ferrari. The architectural setting of all this is extremely delicate and pure, while, in the paint work, the gracious influence of Luini seems to permeate the place and culminates in his beautiful fresco, the "Marriage of the Virgin," in the passage leading to the choir.

Como, besides its wonderful cathedral, has the interesting two-domed Church of San Fedele† and the stately Romanesque Sant' Abbondio, with its twin towers and shafted semi-circular apse. Unless the student desires to work in Como, the whole of the town can be seen in a day, but it certainly must not be missed.

Monza, a town of great historic interest, contains the famous iron crown of Lombardy, a relic of the twelfth century. The Cathedral is mostly fourteenth-century Gothic, in black and white banded marble, five-aisled, and containing some excellent ironwork. When I visited it, the exterior was undergoing extensive repair and was covered with scaffolding. There is a good Broletto at Monza, as at Como. There is a sketch of the latter in that admirable work, Street's "Brick and Marble in the Middle Ages," which every student should pick up if he can.

More important as a whole than any of these places is Pavia, which certainly demands a stay of several days, as from it the Certosa can be visited. But Pavia is a pleasant town to stay in, with a wide blue river spanned by a splendid mediæval bridge. It has fine subjects for water-colour work. From the other side of the river the roofs and towers of the mediæval buildings rise picturesquely, dominated by the imposing Torre del' Cittá. In fine weather Pavia is a place to revel in, full of sunny streets and mellow brickwork. In it we get right into the atmosphere of Lombard brickwork. The most important building at Pavia is the remarkably fine cruciform church of San Michele, with its octagonal dome at the crossing set on squinch arches, crowned externally with the flat pitched roof of Lombardy. The mellow stonework of the eastern apse gives one of the most perfect pictures of texture in architecture that I can remember. The Carmine is another fine church at Pavia, in red brick and terra cotta with pointed arches. The cool effect of the plastered vaults of these churches contrasting with the warm red brick, as well as the methods of lighting, are well worth study. The Duomo is good in its massing and has for a campanile the noble "city tower" referred to above.

It is not easy to write about the Certosa, but it is a wonderful place to visit. One cannot help feeling glad that such work as the delicate marble panelling of the west front has been done, and the colour effects are lovely. Internally, the inlaid marble work of the chapels and the great bronze screens are miracles of finish. The cloisters, in brick and terra cotta, are very beautiful. The setting of the Certosa, its gardens and such-like, all heighten its effect. In its way—a very graceful early Renaissance way, mixed up with Gothic elements—it is unique in Italy, and its craftsmanship in many fine materials is superb.

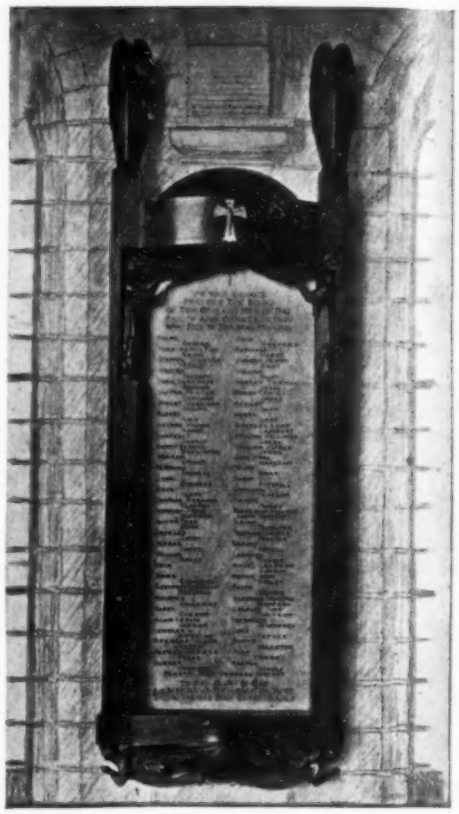
On the way back from Pavia to Milan, the student ought to stop at Chiaravalle, to see the remarkable early thirteenth-century church there, mentioned and illustrated by Fergusson in relation to Arnolfo's dome at Florence. Here is a true octagonal Gothic dome, a pyramidal composition outside, finishing with a Lombard spire like that of San Gottardo at Milan. It rises finely out of a lovely country, something like Ely, with which it has affinities. One can clamber up staircases, more or less perilous, right up into the spire, and get wide views. When I first went to Italy I was reminded of the importance of this church. It merits careful investigation, and would amply repay a student who had time to spend on it. It is probable that lodging on the spot is primitive, but as it is only 5½ miles from Milan it could easily be reached by bicycle. Besides its unique dome, the church has splendid mid-fifteenth-century woodwork.

Busto Arsizio and Abbiategrasso have churches with some resemblances to that at Saronno, ascribed, as usual, to Bramante; and the former has frescoes by Gaudenzio Ferrari. The Renaissance Church of the Incoronata at Lodi is also well worth seeing. Bergamo should certainly not be missed. It is only some 15 miles beyond Monza, but I have never been able to fit it in. Its Colleoni Chapel in the Church of Sta. Maria Maggiore is celebrated for its beautiful tombs. Several details of the church are illustrated in Oakeshotts' book of drawings.

We will now suppose that the student is leaving the Milan district and proceeding slowly towards Venice. The first town of importance on the route is Brescia, and a very fine town it is. The Municipio ("La Loggia") has a richly ornamented façade of the full Renaissance with noble great features in it, facing the great square of the town. There are several interesting churches, and the picture lover will be rewarded by seeing Moretto and Romanino at their very best. Altogether, Brescia is delightful and picturesque, and one can stay many days in it with enjoyment. The rising ground above the town is finely laid out as a public garden, from whence sweeping views of Lake Garda and the country near it can be obtained. The Broletto is one of the best in North Italy, and the museum likewise. This is partly contained in the remains of a Roman temple and is celebrated for its classical antiquities, including a famous bronze "Victory."

A third article in this series will deal with Verona, Vicenza, Padua and Venice.

* See Mr. A. T. Bolton's "The Dome as the basis of an Architectural System."
† Ibid. (Bolton.)



Memorial Tablet, St. John the Evangelist, Balham.

MR. A. E. HENDERSON, F.S.A., Architect.
(*See p.* 179.)

MEETINGS.

MONDAY, *February* 4.

Royal Institute of British Architects.—President's Address to Students. At Burlington House, Piccadilly, W. 1. 8.30 p.m.

TUESDAY, *February* 5.

Liverpool Architectural Society.—Professor T. H. Hughes on "The Monumental Architecture of France." At 13, Harrington-street.

Royal Archæological Institute.—Ordinary Meeting. At Burlington House, W. 1. 5 p.m.

WEDNESDAY, *February* 6.

L.C.C. Central School of Arts and Crafts.—Sir Banister Fletcher on "Thermæ in Rome and the Provinces." 6 p.m.

Royal Society of Arts.—Mr. Iyemasa Tokugawa on "Earthquake and the Work of Reconstruction in Japan." 8 p.m.

THURSDAY, *February* 7.

Master Carvers' Association.—Annual Dinner. At Connaught Rooms, W.C. 2. 7 p.m.

Incorporated Institute of British Decorators.—Mr. H. G. Dowling on "Modern Considerations attaching to Wall Paper Decoration." At Painters' Hall, E.C. 4. 7.30 p.m.

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ILLUSTRATIONS.

Plaza Constitution, Buenos Aires.

This station is the terminus at Buenos Aires of the Buenos Aires Great Southern Railway, and the scheme illustrated was for entire rebuilding. The scheme is to be carried out in a modified form entirely by the Railway Company's own staff. The materials employed are granite for the ground floor, with a brick and plaster super-structure. The climate permits complete freedom in the treatment of this material, with great advantage from an economical point of view. Mr. Arnold Mitchell is the architect.

Memorial to the Missing, Port Thewfik.

Other illustrations of this memorial were given in our issue for January 11. Sir John Burnet, A.R.A., is the principal architect.

Swansea Masonic Temple.

The design for a Masonic Temple at Swansea, by Mr. A. F. Webb, M.S.A., was placed second in the recent competition. The first premiated design in this competition, by Messrs. Willmott & Smith, was given in our issue for December 21, 1923.

Ciborium Altar War Memorial, St. John the Evangelist, Balham.

The arrangement of the walls and doors at the east end of the aisles of the church precluded the ordinary altar and reredos. During the war a small temporary altar was placed and used in the north aisle, and it was decided to erect a permanent one in the same position as the parish war memorial. This was designed and supervised by Mr. A. E. Henderson, F.S.A., and executed by Messrs. John Garlick (1910), Ltd.

It is of rather unique character, and yet sufficiently historical in style to be in keeping with the Gothic design of the church. It is a wood design throughout; no imitation archings are used, but only uprights and beams. The three angels at the top of each post support the superstructure, and the doves carry the cornice. The roof is octagonal and carries a cross of Byzantine design. A complete chapel has been arranged under one roof in a small square of only 8 ft., the whole making a complete Ciborium.

The photographs were taken shortly before the altar decorations were fitted and the dedication. Mr. Henderson has also designed the roll of honour, painted on marble, in a carved mahogany frame, affixed to the pier between the aisle windows.

THE LAW RELATING TO BUILDING.

By W. T. CRESWELL, Lic.R.I.B.A., F.R.S.I. (Barrister-at-Law).

IV.—The Scope and Extent of the Architect's or Surveyor's Authority.

THE lack of personal skill which usually induces the ordinary prospective building owner to employ an architect to prepare designs, plans, &c., also suggests to him his own incompetence to supervise, to successful completion, the work undertaken by the builder. Hence, under ordinary circumstances, the employer relegates to the architect who makes designs, &c., for building works, the supervision of the builder's work.

In this country the custom is for the building owner to employ, severally, an architect to design and supervise, and a builder to provide materials and labour for erection and completion of proposed buildings.

Hence, there comes to an architect or surveyor the position of agent of the employer in relation to the builder; his legal description being "general agent"—see Kimberley *v.* Dick (1871), L.R. 13 Eq. I. As a result of this relationship, questions frequently arise as to the employer's liability for the acts, or orders, of the architect or surveyor, towards, or given to, the builder. Decision regarding such questions depends on whether such acts or orders fall within the limits of the usual authority of an architect or surveyor, or of any special authority given him by the employer.

In general, if an agent falsely represents that he has an authority which he has not, and thereby induces another person to act on the faith of his misrepresentation, there is a fraud; in respect of which, if the person so induced to act is thereby injured, he can recover damages. So then, when an architect or surveyor exceeds his authority without the knowledge of the builder, and causes the builder to provide labour or materials, or to make alterations, without the authority of the employer, the architect is liable, in the event of any objection raised by the employer, to an action for breach of warranty of authority—see Randell *v.* Trimen (1856), 18 C.B. 786. He is also liable to a charge of neglect if he does not show the same degree of skill in supervision to completion of the works as he showed in the preparation of designs, plans, &c.

Questions most frequently arise in the following categories:—

(*a*) Variations from plans. (*b*) Omissions from, and additions to, the contract. (*c*) Employment of a quantity surveyor. (*d*) Certificates granted by the architect.

In a carefully prepared contract, there would be provisions to meet all these eventualities, and any dispute taken before the Court would be settled by a construction of such provisions according to the ordinary rules of construction and applicable in such cases. Any alteration, variation, omission or addition in relation to plans, which during construction appears desirable in the view of the architect or surveyor, should not be carried out until he has sought and obtained ratification and written instructions from the employer; failing which, he may be held liable.

In the case of Sharpe *v.* The San Paulo Railway Co. (1873) 8 Chancery App. 597, where the plaintiffs were constructing a railway for the defendants, and the contract provided that the engineer's certificates should be in writing, it was held that the plaintiffs could not maintain a claim against the defendants merely on verbal promises given by the engineer. Lord Romilly M.R. said "it was quite clear that the engineer had no power to vary the contract, he had power to give directions . . . within the limits of the contract, and if the contractors thought that things were not within the contract they were not bound to do them."

In general, therefore, the architect or surveyor is the agent of the employer for all purposes in connection with the work to be done and within the limitations of the contract. If his authority be further limited by the employer, then the contractor must be informed regarding such limitations; see Kimberley *v.* Dick (1871) L.R. 13 Eq. 1. Also see Betts *v.* Pickford (1906) 75 L.J. Ch. 483, where an architect, who was supervising the erection of a warehouse, permitted roof timbers and stanchions, from an adjacent building also in course of erection, to be inserted into the said warehouse building; it was held that he had exceeded his authority, Kekewick, J., remarking "What is within the scope of an architect's authority I am not called upon to say, but I will say this much, that I apprehend his authority is strictly limited by the nature of his employment; that is to say, as defined by any letters or agreement constituting his employment."

Any person asking for tenders from contractors does not imply that the proposed work can be successfully executed in absolute accordance with the plans, specifications, &c., provided; nor, in fact, has the architect or surveyor any authority to warrant to the contractor the sufficiency of his plans, or that the work can be executed from them or that the bills of quantities are correct. Also, when a clause is inserted in a contract whereby the employer disclaims responsibility for the accuracy of statements and information which he or his architect or surveyor supplies to the contractor, and as to which the contractor is to satisfy himself, such a provision will not exempt the employer from liability in respect of statements or information recklessly or fraudulently made or given by himself, his architect or surveyor, to the contractor. Of course, where the architect or surveyor is at fault, the employer has a remedy against him if the contractor has been able to maintain an action against the employer; see Pearson *v.* Dublin Corporation (1907) A.C. 351.

Omissions from and Additions to the Contract.

Where omissions have been made in the contract documents, it is the duty of the architect or surveyor first to bring these to the notice of the employer, then obtain his written authority to order such omissions as extras on the contract, if they are works reasonably necessary to carry out the contract as signed; see Sharpe *v.* San Paulo Railway Co. (1873) 8 Ch. App. 597.

Impracticable Plans.

If the architect's plans prove to be impracticable, he must obtain the authority of the employer empowering him to order such supplementary or extra work as shall render them practicable see; Tharis Sulphur & Copper Co. *v.* McElroy (1878) 3 App. Cases 1040.

Extra Plans, Working Drawings, &c.

An architect has usually, under the contract authority to furnish further plans, working drawings, and other detailed information, during, and to aid, the progress of the work; but this does not entitle him to vary the work as originally set out in the contract, unless by express authority of the employer in reference to any item varied; see Rex *v.* Peto (1826) and Cooper *v.* Langdon (1841) 9 M. & W. 60.

Substituted Work by the Contractor.

If a contract gives certain powers, they must be strictly exercised. So, if the contractor substitute any work for that stipulated in the contract, he cannot claim for the work so substituted; but the architect for the employer is entitled to demand the removal of such substituted work and the installation of the work stipulated in the contract. This holds even though the substituted work is better than that stipulated; see Forman *v.* The Ship "Liddesdale" (1900) A.C. 190.

There is usually, in building contracts, a provision for all variations and orders given by the architect to be in writing; but all such written orders must be within the limits of his authority as architect; see Steel *v.* Young (1907) S.C. 360. For example, the architect cannot give an order that brickwork shall be in lime mortar when the contract specifies cement mortar, saving only under the consent of the employer; and, in all cases, such consent of the employer should be obtained in writing.

Ciborium Altar War Memorial, St. John the Evangelist, Balham.

Mr. A. E. Henderson, F.S.A., Architect. (*See p.* 179.)

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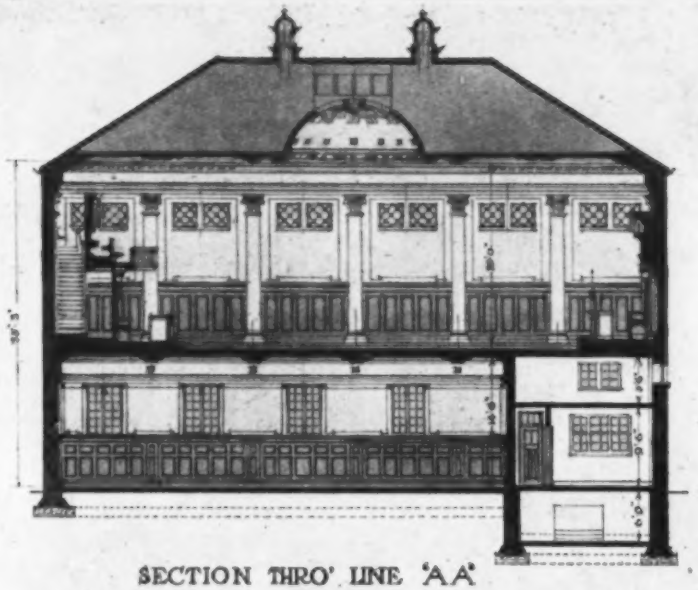

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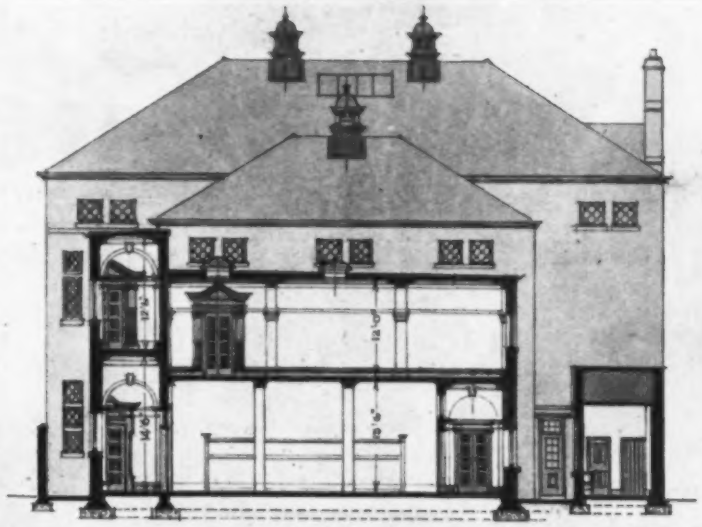

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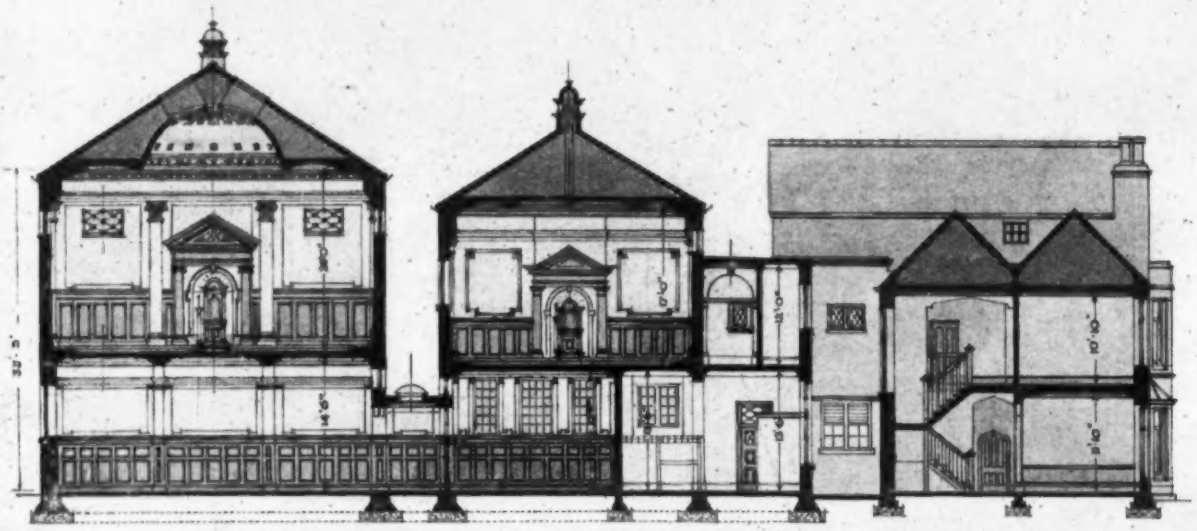

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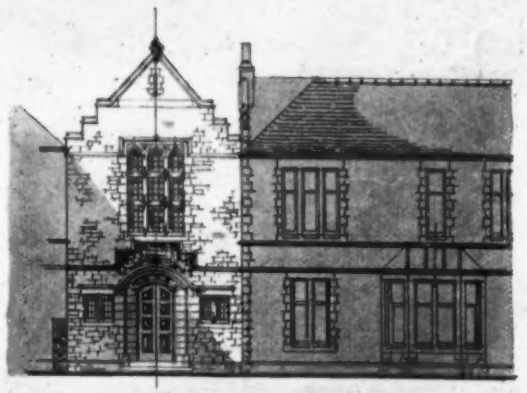
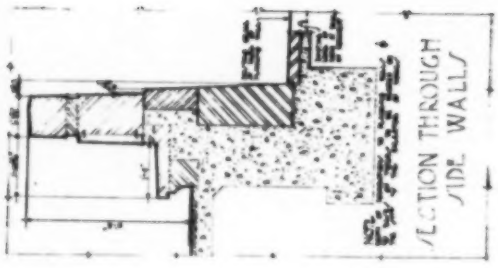


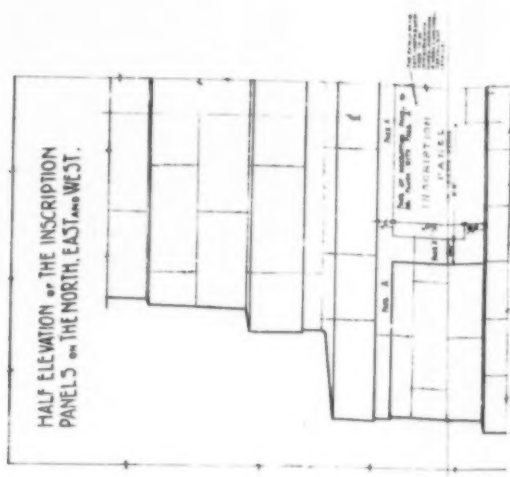
FRONT ELEVATION

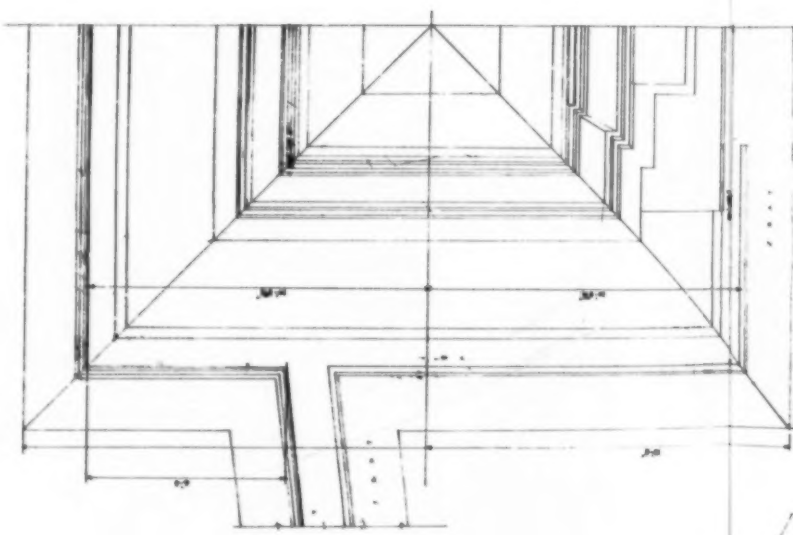
SCALE

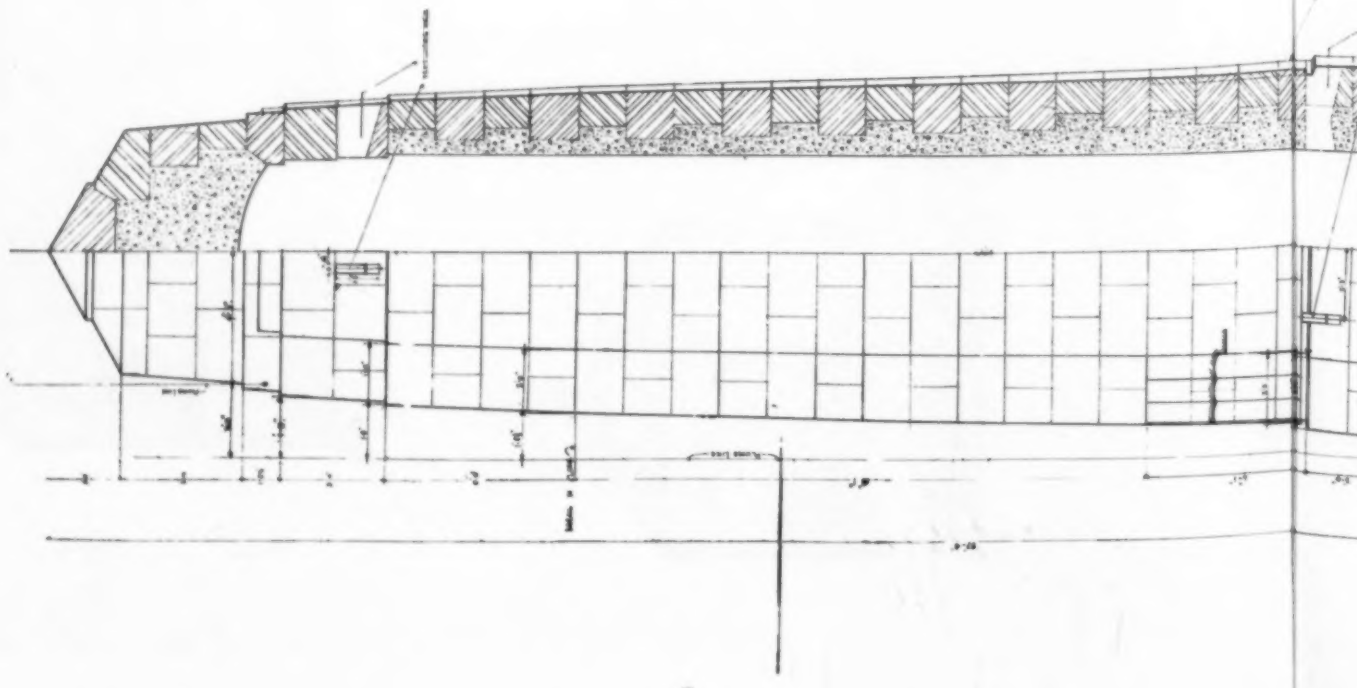
Swansea Masonic Temple Competition. Design Placed Second: By Mr. A. F. Webb, M.S.A.

UNIV. OF MICH.


SECTION THROUGH
SIDE WALLS


HALF ELEVATION of THE INSCRIPTION
PANELS on THE NORTH, EAST and WEST.





HALF PLAN

PLAN OF TERMINAL TO WING WALL

TO THE HONOUR OF THE INDIAN ARMY AND TO THE ENDURING MEMORY OF 64 INDIAN OFFICERS AND 4046 INDIAN NON-COMMISSIONED OFFICERS AND MEN WHO FELL IN EGYPT AND PALESTINE 1914 - 1918

HALF FRONT ELEVATION

HALF SECTION

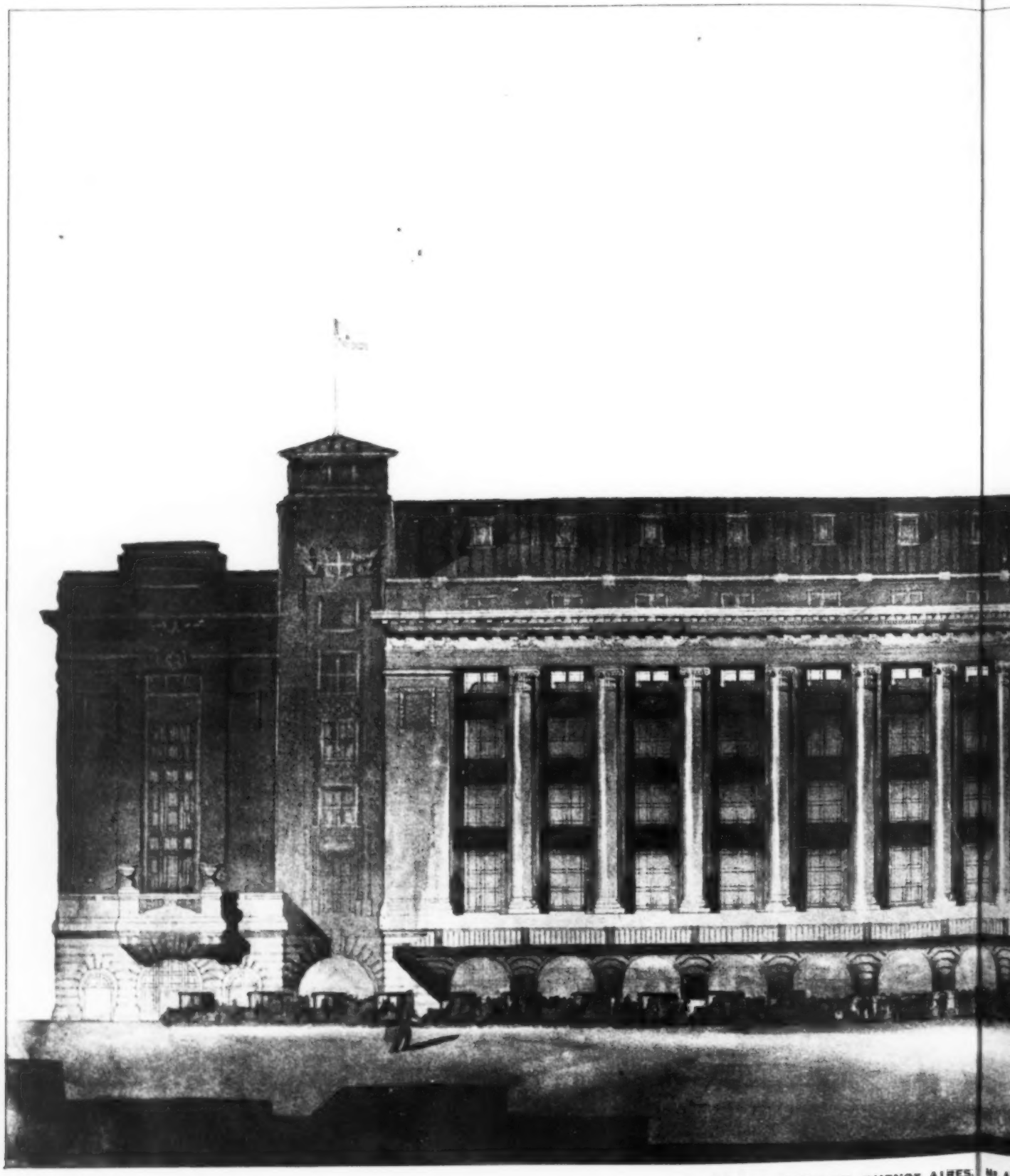
ELEVATION OF TERMINAL TO WING WALL AND PEDESTAL FOR TIGER.

SCALE ¼ INCH TO 1 FOOT

DRAWING No P.T.3.

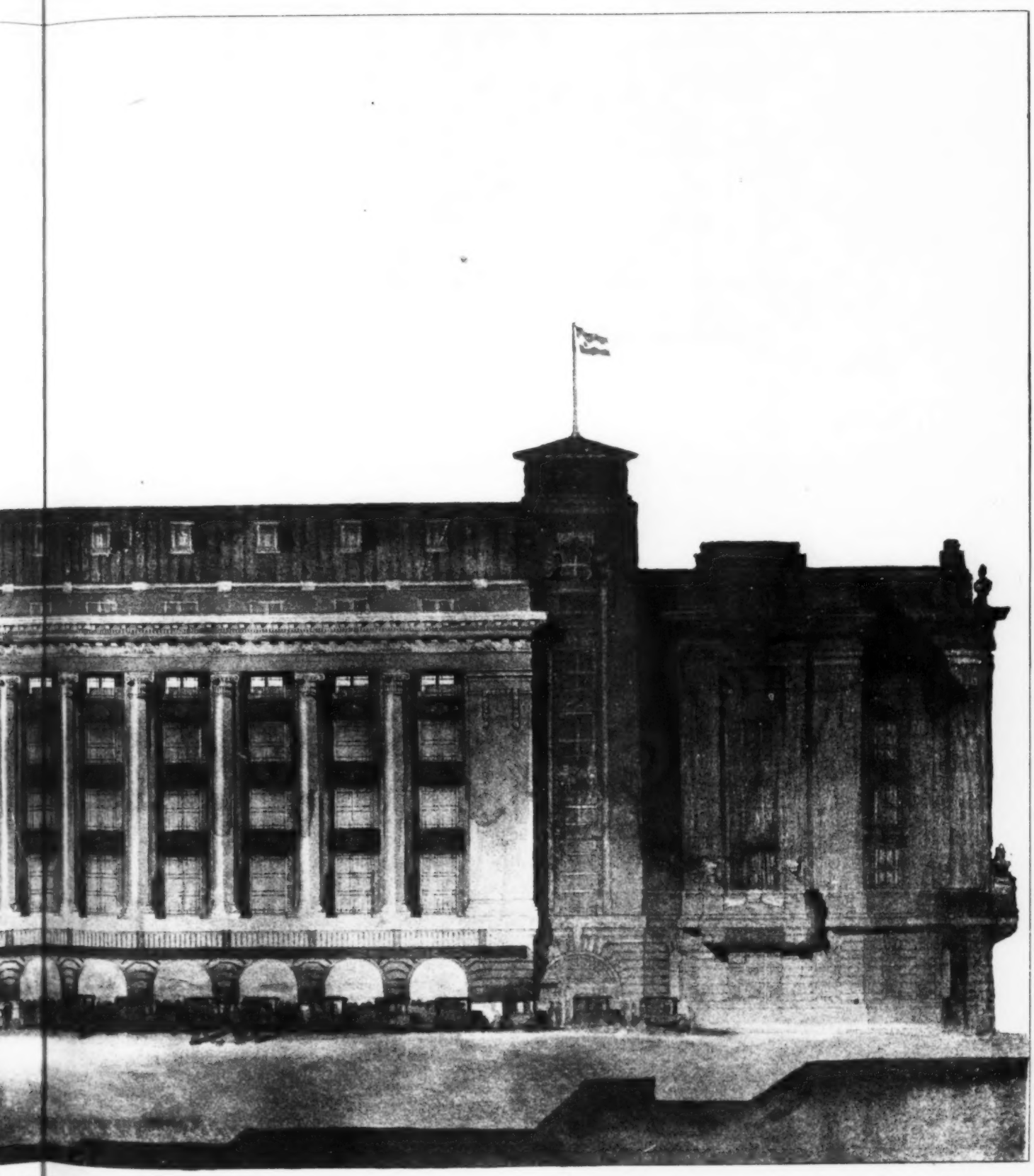
SIR J.J. BURNET, A.R.A.
PRINCIPAL ARCHITECT.
1 MONTAGUE PLACE.
BEDFORD SQUARE. W.C.1.

WAR MEMORIAL. THEWFIK, EGYPT. SIR JOHN BURNET. A.R.A., ARCHITECT.



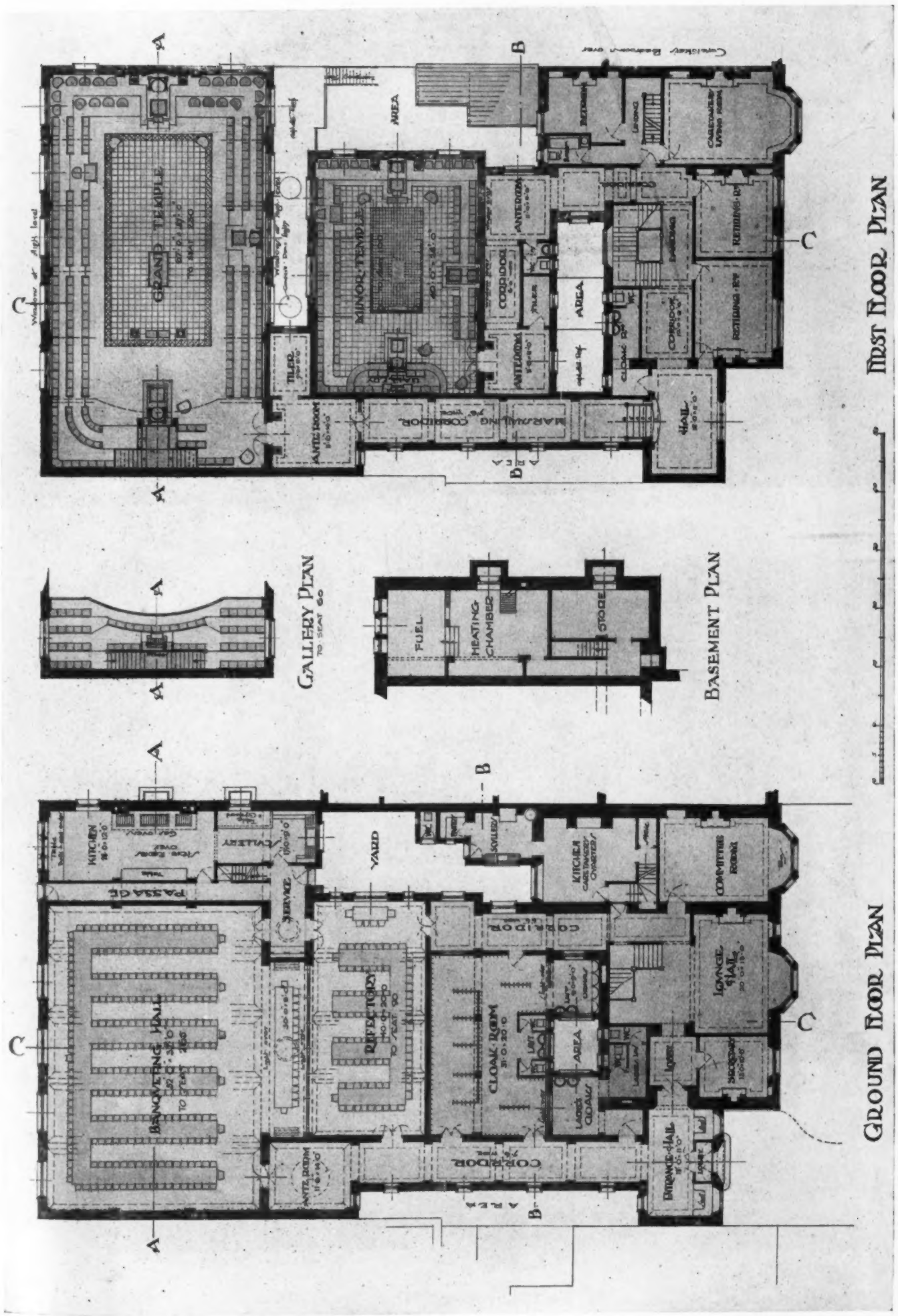
R.A. EXHIBITION.

PLAZA CONSTITUTION, BUENOS AIRES. Mr. A



AIRES. Mr. Arnold Mitchell, Architect.

UNIV. OF MICH.



Swansea Masonic Temple Competition. Design Placed Second: By Mr. A. F. Webb, M.S.A.

UNIV. OF MICH.

D. I. C. House, Manchester, Competition.

Highly-Commended Design: Submitted jointly by MR. G. H. WILLOUGHBY and MESSRS. REES & HOLT.

A COMMISSION OF FINE ARTS

THE following Commission, consisting of nine members, has been appointed by the King on the recommendation of the late Prime Minister—the last public act of his Government. It will be on the lines of the American Fine Arts Commission, which has been in existence since 1910. The Earl of Crawford and Balcarres (chairman), The Marquis Curzon of Kedleston, Sir Aston Webb, P.R.A. (architect), Sir Reginald Blomfield, R.A. (architect), Sir Edwin Lutyens, R.A. (architect), Mr. Alfred J. Gotch, P.R.I.B.A. (architect), Sir George Frampton, R.A. (sculptor), Mr. D. Y. Cameron, R.A. (painter), Mr. T. H. Mawson (President, Town-Planning Institute).

According to statements in the Daily Press the status of the Commission is consultative, with no power of veto, and with no statutory powers in the first instance. Its advice may be sought by the Government or any authority of standing on the location of statues, fountains, and monuments in public squares, streets, and parks, both in London and the provinces, and upon the selection of designs for statues, fountains and monuments, or on any artistic question in the open air, such as elevations of buildings, town planning, and landscape gardening in public parks, and the internal decoration of public buildings.

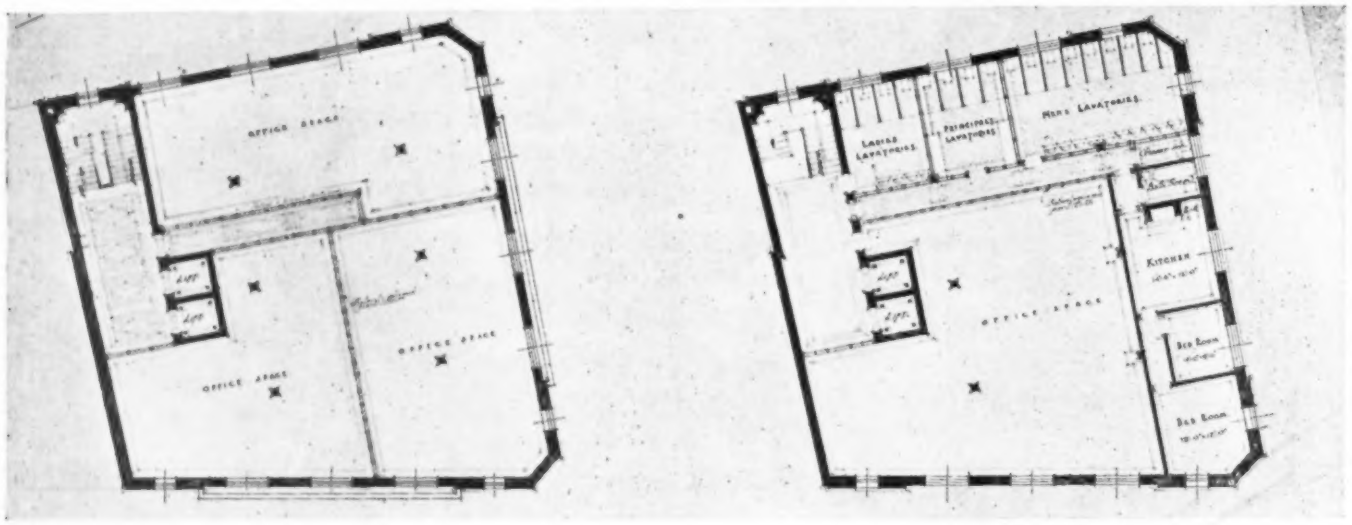
The Commission will have the power to co-opt members or appoint a special committee, if thought advisable, for the study of any special problem. After the first three years from the establishment of the commission two members will retire in turn each year, but will be eligible for re-appointment, if thought desirable. The services of the members of the commission will be honorary; office, secretarial, and travelling expenses alone being allowed.

Possibly the most urgent work of the Committee will be in connection with architecture. There have been many occasions during the last few years when a Fine Arts Committee, if it had been in existence, could have used its influence to prevent many distressing mistakes in the building, and rebuilding, of London.

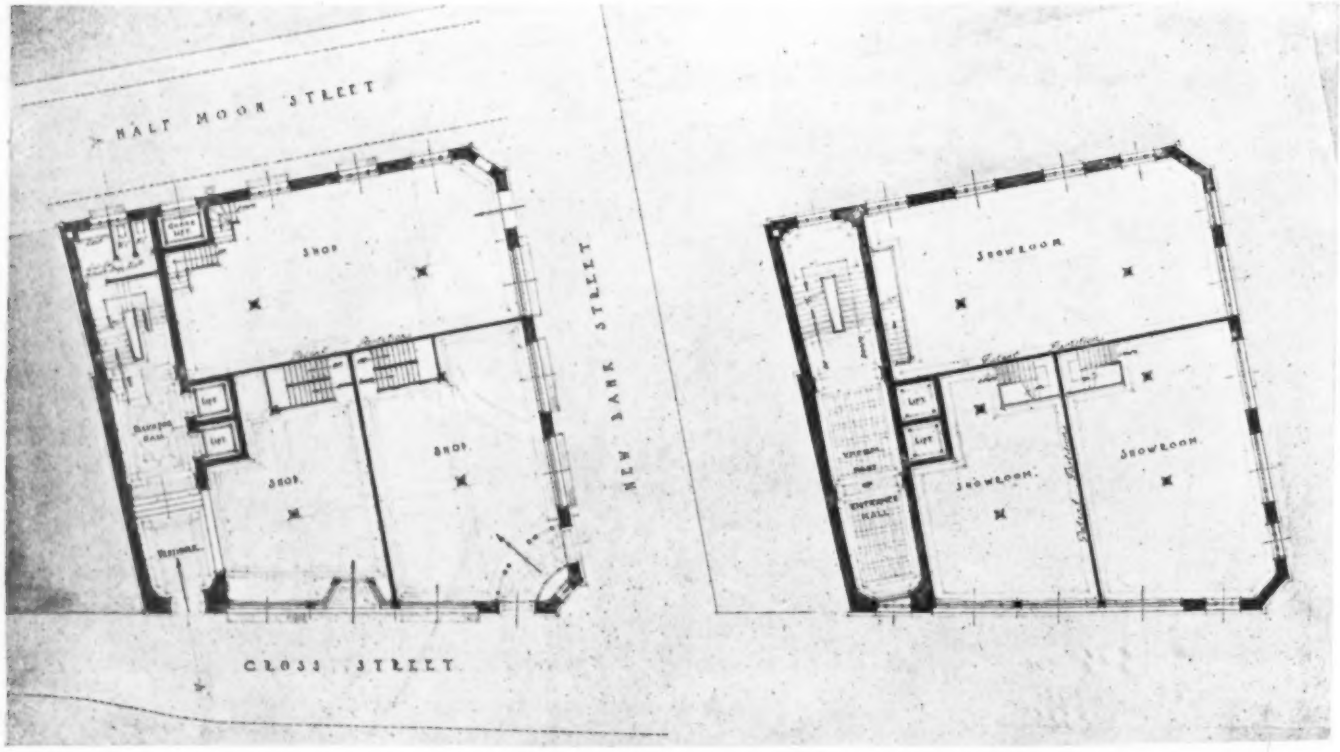
It is doubtful whether the Commission, although only acting in an advisory capacity, will be able to cope with the mass of work which will fall upon it. Perhaps it may be decided to form local Commissions, of a similar calibre to the parent Commission.

It will certainly go a very long way towards the very necessary work of tidying-up London—from, on the one hand, the prevention of architectural atrocities, to, on the other, the small, but significant, matter of the correct naming of streets. It is to be hoped that they will be able to persuade local authorities to follow the example of a certain south-west London area, which, in quite a small compass, can boast of such names for its streets as Elfindale, Deepdene, Sunset, and Afterglow. It is in a neighbourhood closely connected with the "Great and Good John Ruskin." There is little excuse, in a civilised country, for such names as Crab and Bottle-streets.

The London County Council has recently been urging the Borough Councils to make use of the Advertisements Regulation Act to regulate the hoarding nuisance. Strengthened by the Fine Arts Commission, it should surely now be possible to control the many glaring posters which spoil some of London's most beautiful buildings—North, East, South and West.



TYPICAL FLOOR. TOP FLOOR.



GROUND FLOOR. FIRST FLOOR.

D. I. C. House Competition. Highly Recommended Design: Submitted by MR. G. H. WILLOUGHBY and MESSRS. REES & HOLT.

THE FUTURE DEVELOPMENT OF LONDON.

SIR ASTON WEBB, the President of the Royal Academy, in giving the Friday Discourse at the Royal Institution on this subject said, in the course of his remarks, that taking into account that some thirty of the forty million inhabitants of England and Wales lived in cities, the development of towns was, obviously, a matter that must affect for good or ill the health and prosperity of the people. The regional planning, or zoning, necessary for organising town development in connection with the adjoining country, and neighbouring towns and villages, was not a new idea imported from America, but had been practised by the Romans, who had formed six main arterial roads out of London. The London Society, however, during the war had prepared a plan of arterial roads in and out of London which had since been found useful.

He mentioned the railway companies, with their separate stations, as showing the casual way in which London had grown; and remarked that at Victoria two stations had been built side by side divided by a wall, and it had only just occurred to the companies to get rid of the obstruction. The West-end of Edinburgh, and parts of Bath and Buxton, were excellent examples of what forethought and design could do. Several Royal Commissions had recommended uniform and concerted action, and the preparation of a comprehensive plan, yet nothing had been done. The Metropolitan Board of Works had been founded, under the chairmanship of Sir J. McGarel-Hogg, in 1870 and they had been responsible, he considered, for spoiling Piccadilly Circus and forming the very inadequate Shaftesbury-avenue. However, they had created the Thames Embankment, perhaps the finest improvement ever carried out in London. The London County Council, which succeeded the Metropolitan Board of Works, had done good work, but their activities were lessened by the limited area and the powers of veto given to the Borough Councils in their areas. Under Mr. John Burns's Town-Planning Act of 1909, plans for the development of unbuilt areas in Greater London for not fewer than 20,000 inhabitants were being prepared independently of any general scheme, and this might lead to even a worse muddle.

Sir Aston Webb then dealt with the work done by the London Society, the London County Council, and the Royal Institute of British Architects, and said he maintained that the first essential requirement was a complete survey of present conditions, showing in diverse colours public buildings, churches, schools, dwelling houses, commercial buildings, markets, railway stations, parks, playgrounds, &c., and then, after a careful consideration of future needs, the final preparation of a comprehensive scheme. It was gratifying, he continued, to know that there was reason to believe that this project would have the sympathy of the Ministry of Health, who had on their staff many well-known and expert town-planners. Birmingham, Manchester, and other cities were showing the way, and London, if they were not careful, would be left behind.

He made an appeal for the linking up of the southern and northern termini, the passage of goods traffic across London underground, the construction of good arterial roads—a few even 150 ft. wide—arranged for two rows of trees to enclose them, and on the outside two roads for slow traffic. London bridges also required comprehensive consideration and treatment. The congestion of traffic round the docks and Covent Garden was a typical instance of abuse, and the railway congestion was even worse than the road congestion. It was desirable that suitable classes of buildings should be erected on certain sites as occasion offered. Factories in the majority of cases could usually be removed outwards, with advantage to themselves and the community, for it was an anomaly for drain-pipes to be burnt immediately opposite the Houses of Parliament, or next door to Lambeth Palace, or that military barracks should occupy some of the best sites overlooking the Royal Parks.

In reference to the smoke question, Sir Aston Webb said London would never be the city that it deserved to be until the smoke difficulty was got rid of. He recommended the encouragement of the manufacture of smokeless fuel until this was cheaper than soft bituminous coal, and forbidding the use of the latter in large cities, where it had been shown that three-fourths of the smoke arose from the domestic hearth. He did not agree with the suggestion that fresh space should be provided through the erection of higher buildings, because horizontal travelling with sufficient access was preferable to vertical travelling with restricted access.

Finally, he suggested the L.C.C. could possibly obtain statutory powers in one of their omnibus Bills to plan a greater London. It would take time, and the preliminary work might be done, as in America, by expert advisory committees, supported by the general interest and enthusiasm of the public.

ST. PAUL'S CATHEDRAL.

PROBLEMS OF REPAIR.

WE have received from Mr. A. Henthorn Stott the following letter:—

"Your interesting article in the current issue suggests the following:

"First.—Take down the dome and its supports.

"Second.—Impound the whole site with a reinforced concrete wall of sufficient depth, and oval on plan.

"Third.—Rebuild the dome with supports and foundations relatively equal to the surrounding work.

"Fourth.—Rebuild the aisle parapets with cavity walls, the inner being thick and the outer out a shell."

Mr. Stott's suggestions would certainly meet some of the structural difficulties of the case, and his second proposal to "impound the whole site with a reinforced concrete wall of sufficient depth, and oval on plan" deserves to be taken into serious consideration.

Should the slight general sliding on the foundation be found, on investigation, to be continued or threaten to become a menace to the stability of the building, this device would be admirable in that it would leave the Cathedral itself free from disturbance, provided that the work was designed for execution in suitable stages. The excavation to "sufficient depth" would need, of course, all the precautions proper to a work of underpinning if the existing shallow foundations were to be kept intact. The proposals to pull down and rebuild important parts of the Cathedral are by no means acceptable, however, and should not be entertained for a moment. All lovers of Sir Christopher Wren's work will wish to maintain the veritable structure he has left to us, and they would rightly insist that the upper parts of the building, as pointed out in our article, are just those portions in which the characteristic inventive genius of the great master is most vigorously expressed.

The inner and outer domes, the ingenious brick cone with its historical use of reinforcing metal, and the external stone lantern, are features which embody Wren's mental outlook upon constructive architecture, and must be retained in position at all costs. They are not themselves so seriously decayed as the lower parts of the building, and their repair is largely a matter of detailed treatment. Even if sentiment and historical interest were to be altogether laid on one side the cost of demolition and rebuilding would be enormous and unnecessary.

The problems of repairing the building as it stands are certainly difficult, and involved in mutually contradictory conditions, but they are not insuperable and can be solved by the application of scientific principles of construction.

An article upon the repair of Jedburgh Abbey published in our issues of December 14 and 21, 1923, shows that a comparatively small quantity of well chosen new material, if judiciously and inconspicuously applied, can develop and bring into play a great deal of the strength of an old building.

Masses of masonry which were lying inert, unused and even dangerous, were harnessed together by suitable tensile reinforcement in such a manner as would at least render them less dangerous, and had even in some parts transformed a point of weakness into a source of strength.

Design of such inconspicuous methods of repair is costly in preliminary investigation, and makes great demands upon the mental efforts and the courage of those who undertake the work, which is obviously of a special character, and can only be carried out successfully by craftsmen experienced in this branch of building construction.

But by means of such up-to-date methods of repair as were practised by H.M. Office of Works at Jedburgh Abbey the main bulk of the old structure is left undisturbed, and whereas several thousand tons of material would have to be handled, and lowered, and lifted in the processes of demolition and rebuilding the dome of St. Paul's and its supports, only a few hundred tons might be needed in repairing the building on modern lines.

In regard to the aisle walls, the suggestion to rebuild the aisle parapets as hollow walls with the heaviest side placed where it would be most useful in restraining the arch thrusts, the element of demolition is again to the fore. The suggestion is structurally sound, but ignores sentiment and history.

As suggested in our article, suitable reinforcement adequately protected in the heart of the existing parapets; and anchored back around and across the building, would meet the case with a minimum of alteration to the existing structure and also with a minimum of expense.

HOUSING COMMITTEE REPORT.

The Housing Committee of the London County Council is to submit shortly a report dealing with a representation made by the Medical Officer of Health of Poplar with reference to the number of small unhealthy areas in the borough.

The Committee has come to the following conclusion: The conditions existing in the greater part of the Baker's-alley, Birchfield-street, and Bromley-place areas are such that the evils can only be effectively remedied by means of an improvement scheme under the Housing Act of 1890, and that such a scheme ought to be undertaken forthwith. As regards the Baker's-alley area, they propose to deal in the first instance with only the worst part, which lies at the rear of houses in Bow-road, nearly opposite Bow Church, and to this they consider should be added a number of houses on the northern and eastern side of Walter's-court, which should be demolished. The area is roughly 1¼ acres in extent, and comprises about 51 houses, occupied by 416 persons in all. The Birchfield-street area, three-quarters-of-an-acre in extent, comprising 27 houses, with a population of 97 persons; the Bromley-place area is also about three-quarters-of-an-acre in extent, with 35 houses, which are at present occupied by 227 persons of the working classes. The cost of acquisition and clearance of the three areas is estimated at about £12,000, apart from the cost of erecting new dwellings to provide for the rehousing of those displaced.

Owing to the shortage of housing accommodation the question of rehousing was one which presented very great difficulty, and they had had under consideration proposals of the Education Committee with regard to a site known as the Back-alley site, which has been acquired or scheduled for acquisition for the erection of a school. Powers have now been obtained over property in Back-alley for the provision of this alternative accommodation, and the greater portion of the scheduled property has already been purchased.

HELLENISTIC ART IN ANCIENT AMERICA.

BY W. R. LETHABY.

"IN the portico of the British Museum has, not long since, been erected a cast from a big square sculptured pier from Central America. It is described thus: "Guatemala, Pillar from the ancient Maya site of Quregua, A.D. 242." This great cast is part of the Maudslay collection of Maya sculptures from Central America, consisting of many remarkable originals as well as of casts. The originals have for a long time been exhibited on the landing of the N.E. staircase, but the casts have only recently been arranged in a special gallery, and an excellent guide to the collection giving an account of ancient American art has also been published.

Often I have thought of the strange Chinese look of many of these things and had decided for myself that ancient American art must in some way have been an offshoot of Asiatic art.

Again, about a month ago a lecture was given before the Chinese Society in London on the ancient sculpture of China, and the lecturer pointed out how curiously one of the earliest known examples resembled the antique American carvings. Even more recently there have been notices in the Press of an expedition of exploration to Easter Island, where large rude figure sculptures are known to exist (two are in the portico of the British Museum), and the problem of their origin seems to be part of a general question of the transmission of the arts across the seas which divide Asia from America.

A new book which I have found very interesting has now been sent to me for review, and, although I ought to be doing other things, I cannot help expressing the pleasure I have had in reading it. This is "Myths of Pre-Columbian America," by Mr. Donald A. Mackensie,* one of a series on Myth and Legend in Literature and Art, of which half a dozen volumes are by the same author. The meaning of myths is a very large and very cloudy subject-matter to attempt to explain, but the present volume seems to me restrained and suggestive. I cannot pretend to judge these scholarly matters outside the field of art, but I believe that almost any reader is likely to find the book generally convincing on its special thesis. The subject is not so much the interpretation of myths, as a comparison between ideas revealed in the culture of ancient America and that of Asia; leading to the conclusion that there are so many correspondences that there must have been some close relation between the arts of the two continents, although they were sundered by a wide sea.

"The question is faced whether these manifestations of ancient culture were of independent origin or had been imported from the Old World. The view has been favoured by some writers that America remained isolated until it was discovered by Columbus and that we should account for the existence there of habits of life, thought, &c., similar to those found elsewhere by accepting them as proofs of the psychic unity of mankind—as natural products of the human mind. Similar needs, we are informed, produce similar results. . . . Throughout this volume it is shown that there are ample data which point to fusions of myths and beliefs. Anthropologists who favour the idea that pre-Columbian American civilisations were of independent origin have to explain why the myths and practices of the New World assumed at the beginning those complex features which, in the Old World, resulted from the fusions and movements of many peoples of different racial types, after a lapse of time much greater than that covered by New World civilisation. . . . When questions like this are asked, it becomes difficult to reject the view that the sudden growth of civilisation in America resulted from the intrusion of minorities from centres of Old World culture. When, further, it is found that so many beliefs, &c., common to the Old World are found in the New, the contention seems sound that the onus of proof for their faith must be laid on those who favour the theory of independent origin."

* The Gresham Publishing Company, Ltd., 66, Chandos-street, Covent Garden. 12s. 6d.

The argument is wrought out in chapters entitled: The Glamour of Gold, The Elephant in American Art, Symbols with a History, The Winged Disc, American-Asiatic Relations, Ancient Pacific Mariners, Burial Customs, Tlaloc and the Dragon, Motives for Migration, &c.

The author is mainly concerned with beliefs and customs, and although there are some photographs of monuments there is little which deals with the artistic analogies between the monuments of America and Asia. Indeed, most of the plates seem hardly to be referred to in the text. In the index I do not find the words: Architecture, buildings, masonry, sculpture, decoration, orientation, inscriptions. If, however, the student of Art history will examine the collection at the British Museum for himself, while having the question of relation to Chinese

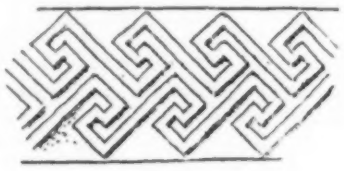


FIG. 1.

art in his mind, he will be likely to be convinced by the direct evidence. Taking only the cast in the portico, it must be admitted that the whole thing looks Chinese—the attitude, face, dress of the figure, the fretted ornamentation and square "scrolls," and even the regular chess-board disposition of the inscription characters; above all a Dragon's head terminating a sort of sceptre carried by the figure is so perfectly Chinese that it is difficult to think that it could have been carved by any other than an artist from the "Middle Kingdom" itself.

Examination of this monument and of the Maudslay collection as a whole will also suggest that behind the more immediate Chinese influence we may perceive Hellenistic sources, and to this further question I will now turn. Works of precision in masonry, figure sculpture, and architectural ornament were all so far as we know of Egyptian origin, and were passed on to Mesopotamia and Greece, and from those to China. The general facts of Hellenistic influence in India and China, have recently been clearly set out by scholars, and they have been

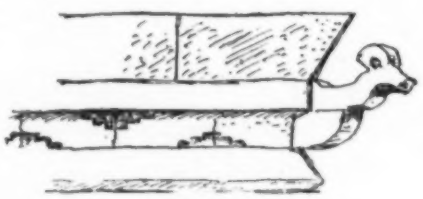


FIG. 2.

fortified by Sir Aurel Steins' explorations along the trade route.

Dr. Giles, in "China and the Chinese (1902)," has a long chapter comparing "China and Ancient Greece," which begins by drawing out general correspondences between the culture and customs of the two peoples, thus: "The water-clock has been known to the Chinese for centuries. Where did it come from? Is it a mere coincidence that the ancient Greeks used water-clocks? Is it a coincidence that the Greeks used an abacus or counting board? Is it a mere coincidence that the olive should be associated in China, as in Greece, with propitiation? A Chinaman who wishes to make up a quarrel will send a piece of red paper containing an olive, in token of friendly feeling. The extraordinary similarities between the Chinese and Pythagorean systems of music place it beyond a doubt that one must have derived from the other. There are also equally extraordinary similarities between the Chinese and Greek Calendars. In 104 B.C. the Chinese adopted a cycle of nineteen years, a period which was found to bring together the solar and the lunar years. But this is precisely the cycle said to have been introduced by Meton in the fifth century B.C., and adopted at Athens about 330 B.C. . . . . We know from Chinese history that, so far back as the second century B.C., Chinese generals succeeded in annexing such distant regions as Kokand and the Pamirs. About 138 B.C. a statesman was sent on a mission to Bactria. Now Bactria was then a Greek Kingdom which had been founded by Diodorus in 256 B.C.; and it would appear to have had commercial relations with China. Chang reported that he had seen Chinese merchandise there in the markets. Chang brought back the walnut and the grape, previously unknown in China. . . . About one hundred years B.C., a new kind of mirror comes into vogue, called by a new name. These new mirrors were discs of metal polished on one side and decorated on the other—a description which tallies with that of the ancient Greek mirror. Illustrations of them are given in the great Encyclopædia, and the fifth of these, second century B.C., is remarkable as being ornamented with the well known 'key,' or Greek pattern, so common in Chinese decoration. Afterwards we come to a mirror decorated with grapes and vine leaves Interspersed are animals, among others the lion. which is unknown in China. . . . Besides, there is a horse with wings. On comparing the latter, with Pegasus it is quite impossible to doubt that the Chinese is a copy of the Greek."

Much more is given by Dr. Giles which results in a convincing proof that in the late Hellenistic and Early-Christian epochs there must have been a very large penetration of Hellenistic culture in Eastern Asia. In the arts, the mirrors with Greek fret and vine decoration, the lion and winged horse are only examples. The roof of corrugated tiles, the arch, the lattice, were all probably borrowings from the West. The model of a high-class Chinese house in the British Museum, with its entrance doors, open court and central reception chamber is remarkably like a Greek house and a Roman villa.

In the volume before me I find other pronouncements to the same effect as those just quoted. Professor Tylor, the late distinguished Oxford authority on Ethnographical lore, after comparing some Mexican and Buddhist pictures, argued that "the appearance of analogies so close and complex of Buddhist ideas in Mexico, constituted a correspondence of so high an order as to preclude any explanation except direct transmission from one religion to another." Again, Dr. Laufer, an American scholar, has more recently said: "In opposition to the prevalent opinion, it cannot be emphasised enough that Chinese civilisation is not the exclusive production of the Chinese but an amalgamation of ideas accumulated from manifold quarters" (1912). Again, in "A Study in Chinese and Hellenistic Folklore" (1915), he points out that "certain fundamental religious ideas reached China from *Fu-lin* (Syria and Byzantium)." Still later, Professor Elliot Smith sees that America is "a rich storehouse of historical date . . . a museum of the cultural history of the Old World. . . . When venturesome sailors began to navigate the open seas and exploit Polynesia, for centuries there was more or less constant influx of customs and beliefs, which were drawn from Egypt and Babylonia, from the Mediterranean and East Africa, from India, China and Japan . . . From this jumble of confusion the local priesthood of Central America built up a system which is distinctively American, though most of the ingredients was borrowed from the Old World" ("The Evolution of the Dragon"). Compare also the work of Mr. W. J. Perry on the distribution of ancient megaliths.

When I selected my title I had no thought that any writer had suggested the possibility of any large transfusion of ideas from the classical world to America, and I am yet ignorant whether detailed parallels have been drawn in the field of art; but that the material exists for such comparison even the few photographic

plates in the volume before us demonstrate. I will comment on them in their order, numbering them according to the pages they face.

8. A long terrace, with massive façade wall of fine big, ashlar masonry, consisting of plinths, table courses and panels, the last containing adaptations of Greek fret and running-scroll patterns, also of an all-over lozenge diaper. The running-scroll pattern was a typical Hellenistic motive. The diagonal fret is probably the most popular of all Chinese patterns even to this day. It is found on Coptic stuffs of about the fifth century and reached Britain by the seventh. At this time it was probably known all round the world including America. (Fig. 1).

16. A stone building having coarsed rubble walls to the height of the door-lintel and wrought masonry above. The front is divided into storys by projecting table mouldings and ornamental bands, making-up what might properly be called entablatures. The "cornice" here and elsewhere is a plain but effective splay. (Fig. 2).

84. Sculptured figures in profile, very well drawn, with some classical grace showing through the hieratic treatment. (This is from "A Glimpse of Guatemala," by Maudslay, which is evidently a book to consult).

104. Photograph of another figure sculpture. A robe is covered with a continuous lozenge diaper of quite a civilised kind; it might appear unchanged on a Roman mosaic floor, a Romanesque wall-painting, or an Eastern carpet. (The original sculpture is in the British Museum). Compare Fig. 5 (*b*).

120. A megalithic gateway of wrought stone, with what looks like a sun symbol sculptured in the middle. A band of ornament is made up of a fret pattern with panels inserted at intervals—ingenious and quite civilised; the principle is found in Roman mosaics, but this is a playful variation and looks very Chinese. (Fig. 3.)

FIG. 3

160. Remarkable square temple on a tall stepped-pyramid, which was very like the diminishing terraces of the Chinese temple of heaven; the temple is divided into two storys by projecting courses with others above forming an upper cornice—in a way refined and classic.

292. A large monolithic "drum" surrounded by sculptured reliefs with top and bottom borders. At first the "Mexican" look of the pairs of fighting figures make it seem "barbaric," but it is a serious work of skilful art, and the way in which a series of circular shields link the several groups together is masterly. The borders are simple, orderly and civilised; in the top one are units which look as if they might be derivations from Ionic capitals and the bottom border is quite romantic and "Byzantine." (Fig. 4). It might be in Sta. Sophia.

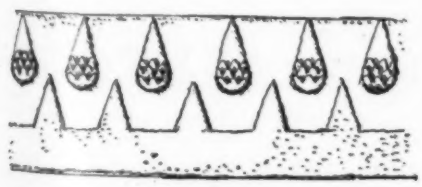


FIG. 4.

312. This is a wonderfully fine piece of polygonal masonry beautifully wrought with rounded edges at the joints. Roughly polygonal masonry is a common thing in Japan, but the indented joints and fairness of this work have a Hellenistic look. As remarked in Daremberg & Saglio's great "Dictionary of Antiquities," it is a mistake to think of polygonal masonry in Greece as necessarily primitive—it persisted in city walls and such like till a late date.

I add a few sketches, made in the British Museum, of details which have a close resemblance to those of late Greek art.

Fig. 5 (*a*) shows a general type of doorway: that of the megalithic monument mentioned above, of which there is a small model in the Museum, is like this, and there are at least two

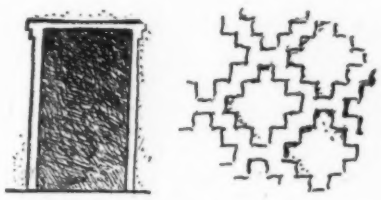


FIG. 5.

others shown in small wooden models; over one of the latter is a small window opening with a round head, which must be a derivative of a true arch. The recessed margins of the doorways is manifestly very like the classical shouldered architrave. Fig. 5 (*b*) is from a pottery vessel, a favourite form of all-over pattern. A similar pattern of large scale occurs on the terrace front described above. Fig. 6 (*a*) is a guilloche pattern from one of the plaster

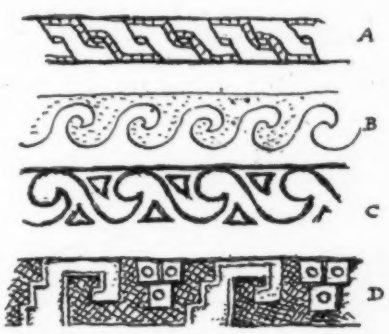


FIG. 6.

casts; (*b*) is a wave-scroll from a pot; (*c*) is another; (*d*) from an original sculptured panel, appears to be a version of the same scroll which has been squared for weaving. On this panel and two others draperies have all-over patterns something like 5 (*b*), which is evidently well suited for textiles.

Fig. 7 is a carved roll moulding from the angles of the monument in the Museum portico, and this is strikingly Hellenistic. One of the plaster casts has a cable moulding, and doubtless

FIG. 7.

other classical likenesses could be found in the ornamental details.

Much of the sculpture is repulsively "savage," but examples can be picked out of a sweeter temper and high competence in workmanship. One little head of green jadite in the Ethnological Gallery is really beautiful, and so Chinese that it might almost be an importation. A second larger head in white stone (Maundslay Coll.) is also an able piece of work. In the cast gallery there is a panel in flat relief of a nude figure squatting on a throne which has grace and charm. The execution of some of the original panels at the Museum is exceptionally delicate, and yet masterly.

If our ordinary reasoning on artistic origins and affinities are generally true, then it may be asserted with confidence that the art of Central America was closely related to that of China, and like it had Hellenistic elements. If the Hellenistic elements are admitted, then I would suggest we have a further criterion for dating the ancient American monuments. By the chronology of the British Museum Guide (which, by the way, does not mention China nor Greece) the cast in the portico is dated about A.D. 240, but it is noted that, "Recently Professor Morley has worked out another correction . . . his dating is consistently 270 years later than that first suggested by Bowditch. Those who are convinced have merely to add 270 years to the dates as they appear on this Guide." On my line of approach I am drawn to the later dating, which would make A.D. 500 a central date in the art of ancient America, and thus allow more time for the expansion of late Hellenistic art in China (Buddhist?) and the passing of it on to America.

TOWN PLANNING.

DR. I. G. GIBBON, Assistant Secretary of the Ministry of Health, delivered a lecture on "Town Planning" at the London School of Economics recently. Sir Aston Webb, who presided, said it was a matter which should interest everyone. It was a great mistake that streets and cities were planned by nobody.

In the course of his remarks the lecturer said it was time that the architect, the engineer, and the surveyor took adequate measures to learn the business of town planning. In their English fashion of putting the cart before the horse they had done very little indeed in the way of such study. They were too complacent in this country, too content with makeshifts, but they paid very heavily indeed for their ways.

Dealing with the financial aspect of the subject, he said that the future of town planning depended on to what extent business men took hold of the problem. Economic production depended on the grouping of businesses. Generally that could only be obtained where there was intelligent town planning.

He considered the traffic problem could not be solved by traffic facilities. It could only be cured by reducing the traffic, and that could only be done by the proper location of places for various uses. It was a question whether they were not to-day pursuing a wasteful path by using their roads for so much heavy motor lorry traffic. The hindrance to the use of the railways was loading and unloading. If they had railways from works to warehouses and factories to docks, where loading and unloading unnecessarily was avoided, there would be enormous gain.

The time was ripe for the preparation of a plan for London. Improvements and developments ought to proceed on a plan after inquiry, and that applied to St. Paul's Bridge, Charing Cross Bridge, and Lambeth Bridge. At the moment it seemed it was no one's business. He would like to see for London the appointment of a general committee representing all the various interests. Under that committee should be a small executive, on which business should be strongly represented, to supervise and direct the work necessary for a plan. A great deal of money would not be required to begin with. Money would not be difficult if a few big business men were convinced of the vital urgency of the problem for the industrial and commercial well-being of London.

THE RENAISSANCE OF BIRMINGHAM.

MR. RUPERT SAVAGE, F.R.I.B.A., recently gave his presidential address to the Birmingham Architectural Association. In the course of his address he said the term Renaissance was usually employed to describe the revival in scholarship and art which occurred during the fifteenth and sixteenth centuries, but he used it more particularly in reference to architecture.

The Renaissance of Birmingham was a movement which had scarcely begun, but of which they saw some premonitory symptoms; for, when they compared the city with other great cities at home and abroad, they would come to the conclusion that the Renaissance was not only inevitable but was very much overdue.

There were few who would deny that Birmingham—the greatest city in England (excluding London)—presented an outward aspect unworthy of its commercial greatness. It claimed the title of the Capital of the Midlands, and was not only a great centre of commerce and industry but also of music, painting, the drama, and all the arts, architecture excepted. The present state of their city might be summarised as a huge agglomeration of human beings, crowded into a formless mass of mean streets and shabby buildings. It had never been planned—it had simply grown in a shapeless form, dictated by the apparent needs of the moment. Considering its size, Birmingham was singularly lacking in fine, main thoroughfares, and there were few streets having any pretensions to size and dignity. The main roads leading out of the town were ill-defined, narrow, and tortuous. There were few open spaces, and such as existed were irregular in plan and devoid of buildings of a monumental character.

The shopping area in the centre of the town was small and inadequate, while in the suburbs they found miles of miserable shops whose very existence seemed superfluous. Their public buildings were few and scattered, and whatever merit they possessed was discounted by an absence of logical grouping.

Whatever might be thought of this description of the city as it was to-day, there was at least sufficient truth in it to demonstrate the need for an early improvement. If the movement for the betterment of the town were to prosper and fructify, it was at first necessary to enlist the interest and sympathy of the whole body of citizens, and to awaken them to a consciousness of their present shortcomings, and to instil a spirit of civic patriotism. An aptitude for buying in the cheapest market and selling in the dearest might lead to an acquisition of wealth, but it certainly was not conducive to an appreciation of the higher aspects of life, and it was this commercial spirit which was to-day the great bar to all advancement in the purely cultural and æsthetic movements. Among the ranks of the City Council there were a number of capable and energetic workers in the cause of betterment, but their energies were directed to strictly utilitarian projects, and there were few indeed who had any lively conception of the great moral value of abstract beauty.

Destructive criticism was an easy task, but had limited value; it was necessary, then, to offer some concrete suggestions as to the direction the proposed movement should take and the means by which it might be accomplished. These suggestions must necessarily be limited to those which more closely concerned the Architectural profession, viz., the improvement in town planning and street architecture.

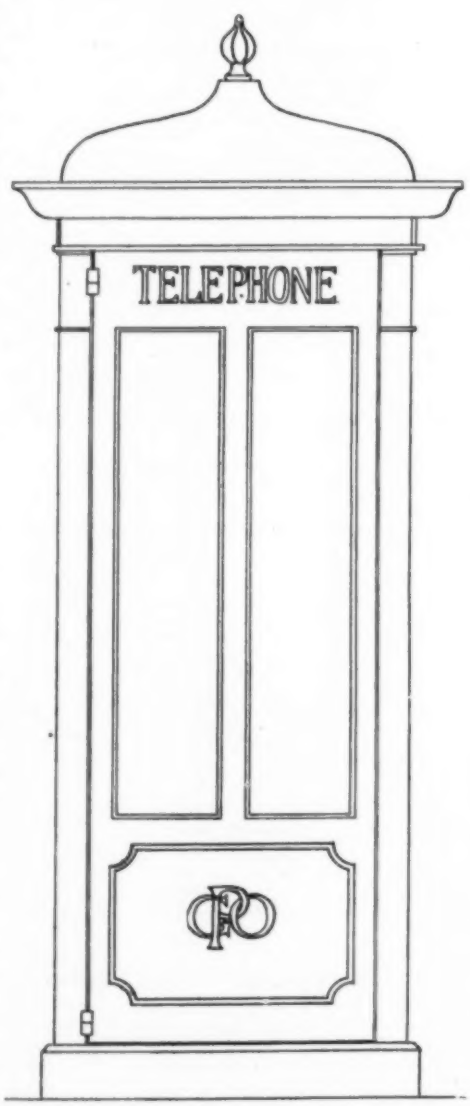
The first step to be taken, as previously stated, was to arouse the interest and enlist the support of the man in the street. The second step was to make a general survey of future developments. The third, and perhaps the most important, was to ascertain what could be commenced and accomplished during the present generation.

There already existed a number of agencies for arousing the interest of the public and promoting civic patriotism. Notable among them was the Civic Society, which existed for the purpose of assisting the movement now advocated, while the University was becoming increasingly active in proclaiming the cultural value of non-commercial subjects. The Municipal School of Art was inculcating an appreciation of æsthetic values over a wide area, and with its assistance their School of Architecture was doing valuable work in imparting a sound technical training to the rising generation of Birmingham architects, and last, but not least, was the Birmingham Architectural Association, which was endeavouring to improve the standard of current architecture and the status of the profession. It was to be hoped that the united efforts of those bodies, aided by a sympathetic attitude on the part of their civic rulers, might ultimately elicit some response from their rather unresponsive citizens.

When they came to survey the programme of future development, they quickly came up against the fact that they were dealing with a fully developed town. Some town-planning enthusiasts were apt to forget this and seemed to think that they were planning a new city on an open plain; for, in the centre of the town in particular, it was impossible to demolish whole streets and extinguish old-established interests.

The City Council had been engaged for some years on the task of town planning Birmingham, and much useful work had been done. While they recognised the effort that had been made, they, as architects, were inclined to feel that the work had been influenced solely by technical considerations and the æsthetic aspect had been insufficiently recognised.

In many towns the work had been placed in the hands of experienced architects, but it would appear that road-making, sewage, and traffic control were the sole considerations. In most European countries and America, where the architect was an important factor in all civic developments, they saw, as a result, a remarkable difference between their own towns and those they visited in their foreign travels.



G.P.O. Public Telephone Call Office.

In most Continental towns the railway station was a building of some architectural pretensions and was approached by a public square, and thus formed a dignified entrance to the town. The Prefecture, the Town Hall, and Art Galleries were fine buildings well displayed in open spaces. The large Opera House was a source of pride to the Municipality, who usually contributed to its upkeep.

In England, however, they did things differently. The railway stations were erected by private enterprise and the planning of their approach was a matter of hazard. Their theatres were run for private gain and received no support from the Municipality. The same tale of non-interference might be told of many of their semi-public buildings, largely due, no doubt, to the pronounced individualism so characteristic of their race.

What they might hope for in the future development of their city was a complete and comprehensive town plan of the city and its suburbs, with due regard to the architectural and artistic aspects of the subject, the reconstruction of their railway stations and the construction of new arterial roads. They also hoped to see the erection of a public hall adequate to the needs of the city, and a really fine exhibition hall to replace the obsolete Bingley Hall; their really fine Market Hall might be renovated, and their wholesale markets re-grouped on a coherent plan. The question of slum clearance and provision of new homes for workers was too big a subject for treatment there, but was a matter of urgent necessity. These were a few suggestions for a far-reaching scheme which might easily take a century to develop. What could they do now, or in the immediate future, as the contribution of their generation to the general scheme?

The most pressing need was for the completion and publication of town plans for inner Birmingham, for the present uncertainty as to street widening and frontage was a serious hindrance to freeholders and building owners alike. The planning of the new public square at the bottom of Broad-street might be proceeded with, and the rebuilding of the street itself on more generous lines might be encouraged. The scheme for a new thoroughfare across New-street Station was a project of the first magnitude, and it was to be hoped that it would be considered in relation to the remodelling of the station itself, which was at present not only an obstruction but an eyesore.

In the matter of housing, the City Council could materially aid the orderly development of new districts by inaugurating a building policy having some regard to lay-out and architectural composition; for the present type of house might be economically sound but it left much to be desired in the way of design.

The freeholders could help to improve the standard of building by relaxing their rigid attitude and by selling freely to those who wished to build. The present leasehold system was the worst cause of poor building in Birmingham.

The building owners could do much for the future of the city by taking a wider and more generous view of expenditure on building. The great manufacturing and trading companies in the city might assist the movement by building central offices worthy of their commercial importance.

The architects might help in the Renaissance of Birmingham by placing at the disposal of their clients sound advice and efficient professional service. There could be no question that the improvement in architectural education in recent years was already bearing fruit in a higher standard of work, a process which would become increasingly evident as the present generation grew up.

They all realised that the progress of improvement must be gradual and spontaneous. Let them hope, however, that the voice of their protests and aspirations might have some small influence in hastening the commencement of the Renaissance of Birmingham.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

ANNUAL GENERAL MEETING OF THE METROPOLITAN BRANCH.

MR. J. W. DENNINGTON (Chairman), who is now President of the Union, presided at the annual general meeting of the Metropolitan Branch of the Architects' and Surveyors' Assistants' Professional Union, at Caxton Hall, Westminster, S.W. 1, on Thursday last week.

After the minutes of the last meeting had been approved and signed, MR. J. A. GOULD (Honorary Secretary) gave a report of the activities of the Branch during the past year. The Branch was, he said, always endeavouring to raise the status of its members, both collectively and individually. The Union was in a rather unique position. It was a body of workers in the architectural, surveying, and building professions; it was non-political; and it had never been subsidised by anyone. It was an entirely self-supporting body, and in consequence it was in a position to discuss matters from the assistants' point of view without anyone being able to tie its hands. The Union did nothing outrageous, nor asked for anything outrageous; but, nevertheless, it insisted on its rightful claims for the assistant. The Union worked for the benefit of the professions which its membership represented, and it had gained the respect of the learned societies throughout the country within the short period of four years during which it had been in existence. During its year of office, the retiring committee had worked enthusiastically and unceasingly in the interests of the members. The first thing it tackled was the question of unemployment, and it had taken steps which had resulted in the provision of employment for many of the members. The question of a benefit fund had also been taken up, and a scheme was prepared and submitted to the Executive Council of the Union. It was proposed to call the fund the "Benevolent Fund of the Architects' and Surveyors' Assistants' Professional Union." The objects of the fund would be to provide benefits for members of the Union who needed assistance, to care for the widows and orphans of deceased members, to make loans to the younger members to help them in following up their profession, to endow rest homes for the members, and otherwise. The scheme was received very favourably by the Executive Council, and several of the provincial branches had already stated that they were in favour of it. A proposal that the title of the Union should be altered, so that it might become known as a learned society, had also been considered, but they were all agreed that the Union should remain a union. Another point which had been brought to the notice of the Executive Council was the question of the payment of unemployed benefit to professional workers; it seemed very unfair that the professional worker should be denied the unemployment benefit received by the manual worker, and it was suggested that the matter be put before the National Federation of Non-Manual Workers. A scheme for obtaining trade discounts for members of the Union was also under discussion. The social side had not been overlooked, and a great many events had been arranged.

In conclusion, Mr. Gould said he wished to relinquish the Honorary Secretaryship in order to be able to give all his spare time to a scheme he had in hand for the provision of a hostel in London for the use of the members of the Union. The sort of thing he had in mind was a hostel, centrally situated, for the accommodation of members visiting or taking appointments in London, and also to be used for the offices of the Union, of the Metropolitan Branch, and for social purposes. It would comprise a hall, offices, bedrooms, bathrooms, a lounge, reference library, a professional bureau, restaurant, games rooms, and arrangements for outdoor sports. He had had several offers of help, financially and otherwise, from influential members of the professions concerned, and it was anticipated that the total cost would be covered by increasing the subscription of members by 10s. a year, because a great deal of expenditure now incurred for office accommodation and the hire of halls for meetings, lectures, and social events, would be saved, and the money received for the use of the hostel would be a continual source of revenue to the Union. The existing professional bodies had no facilities of the kind which would be provided by the proposed hostel, and it was anticipated that this added advantage accompanying membership of the Union would result in a considerable increase in membership.

The report and the Treasurer's report, which showed a satisfactory balance, were adopted.

The following officers were elected for the ensuing year:—

Chairman: Mr. L. E. Wheble.
Vice-Chairman: Mr. J. A. Hatfield.
Hon. Treasurer: Mr. R. G. Forbes, M.S.A.
Auditors: Messrs. Rattenbury & Wright.

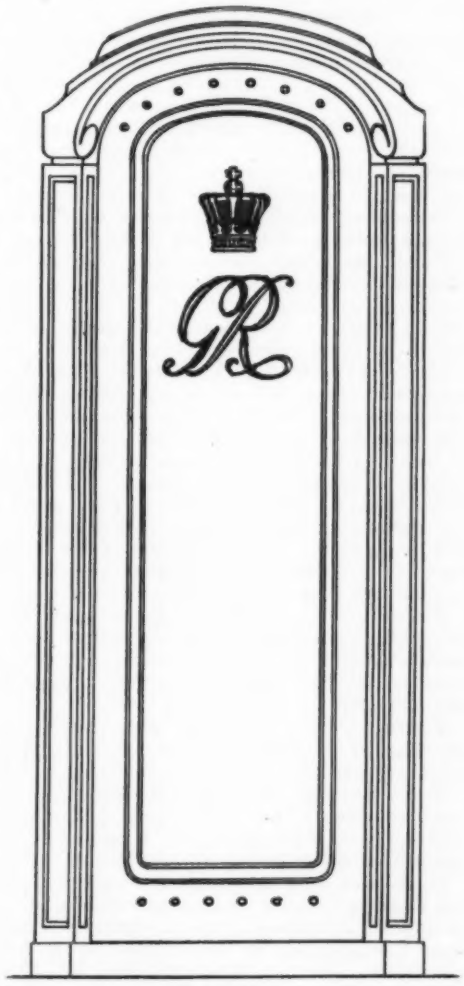
Mr. Gould's intimation that he wished to retire from the Honorary Secretaryship was received with general regret, and on the unanimous request of the meeting he consented to serve until a successor was appointed.

The new Committee was appointed as follows: Messrs. J. G. Batley; A. F. Lodge; A. A. Beckham, P.A.S.I.; A. S. Reeves; F. C. Burton, M.S.A.; L. E. Wheble, A.R.S.I.; H. J. Mark, Lic.R.I.B.A.; C. R. Cathrow; J. A. Hatfield; N. H. Cooper; J. A. Gould; E. H. Worley; J. O. H. Hughes, M.S.A., M.I.S.E.; H. R. Sayer, F.S.I., A.R.I.B.A.; R. S. Forbes, M.S.A.; A. P. Knight; J. H. Metcalf; W. S. Dalton; H. Hyams, F.R.I.B.A.; and P. Manger, A.R.I.B.A.

After the formal business of the meeting, MR. JOHN MITCHELL (General Secretary of the Union) made a short speech on the objects and aims of the Union. After an appreciation of the services of Mr. J. A. Gould, who was, he said, one of the most enthusiastic members of the Union, he reminded them that on March 4 this year the London Area would celebrate its fifth birthday. Since then wonderful progress had been made. The Union had brought to light the fact that there were assistants in the architectural and surveying professions working for salaries and under conditions which were a disgrace to those professions, and since its inception it had done much to improve the status and working conditions of its membership. A minimum salary had been set up, and none of the large number of situations which the Union had found for its members had been at less than the minimum rate. The Union was now in negotiation with the Royal Institute of British Architects on the question of the direct representation of the Union on the R.I.B.A. Council. The question of minimum salaries was also now under discussion between the two bodies, and a joint conference on the subject of overcrowding in the profession was being arranged. He felt that one of the chief causes of the present low salaries in the architectural and surveying professions was the large number of inefficient men. There were three methods of entry into the professions, namely, (1) from the schools, (2) pupilage, and (3) entering an office as a youth with no proper pupilage and picking up the profession at the office and at an evening school. The schools were more or less business concerns, and did not place any bounds on the number of assistants the profession could absorb; the pupilage system was one which allowed of grave abuses; and the other means of entering the profession was no system at all. A committee had been appointed by the Union to go into the whole question of education and overcrowding in both professions, and also as it affected technical assistants in the building industry. From a census which had been taken it was found that about 20 per cent. of the assistants in the two professions had not come from day courses at recognised schools nor had they had any definite pupilage—they simply entered an architect's or surveyor's office as office boys or typists and learned what they could. That resulted in a low standard of achievement, and the Union was putting forward proposals which would result in raising the general level of achievement. It was also proposed to look after the interest of technical assistants in the building industry, for they were often people who had left architects' offices and gone into a builder's office because of the better salary and conditions which the latter offered. The benevolent fund scheme was being taken up by the branches with great enthusiasm, as it was realised that such a scheme would be invaluable in widening the scope of the Union. A National Convention had been arranged to be held this year at Olympia during the Building Trades Exhibition. A series of lectures would be given by well-known men, and parties had already been formed in Devon, Southampton, Leicester, Northamptonshire, Birmingham, Scotland, and other places to attend. It was hoped to hold a dinner at Olympia after the Conference, and also to organise visits to the British Empire Exhibition and other places of interest to the members. He was much interested in the scheme for the provision of a hostel, and hoped the members would give it their hearty support.

In conclusion, he said it was very gratifying to see the way in which the membership of the Union had increased during the past year. Some of the branches, such as Manchester, had actually doubled their membership, and many had recorded increases of 50 per cent. and over; in London alone the membership increased by 103 last year, and it would certainly not be long before every assistant in the architectural and surveying professions was a member.

After some further discussion, the meeting terminated with a hearty vote of thanks to the Chairman for presiding.



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Design for a Public Telephone Call Office.

(Suggested by the Birmingham Civic Society. See "Notes" pages.)

THE ARCHITECTS' AND BUILDERS' INQUIRY BUREAU.

Band Re-Sawing Machine.

SIR,—I should be glad to have full particulars of this machine suitable for a builder, and in particular would like to know :—

1. Machine suitable for cutting deals, maximum cut say 18 in. deep. Is the machine suitable and economical for shallow cutting, say down to 2 in. ? What kind of foundation and depth below the floor is needed ?

2. What accessories are necessary in addition to the machine itself to keep it and saws in order ?

3. Approximate output and suitable equipment for handling timber—feeding and taking away, and space required.

4. Approximate cost of the whole outfit, and actual experience of the use of the machine.

5. Best makers. "SAWYER."

[REPLY.]

"SAWYER."—(1) You can rip deals to the maximum depth of the machine on virtually any properly constructed band-saw. The maximum depth of any particular machine is determined by the height above the table to which the top guide can be lifted. The process will, however, be slow and inefficient unless you use a properly constructed "band re-saw" with pulleys of from 4 ft. to 5 ft. diameter, with blades of from 4 in. to 6 in. in width, and fitted with a powerful feed.

As a rule these high-speed re-saws are not adapted for flatting, as it is assumed that they will be used continually on deep cutting, and flatting can be done on a less powerful machine. At least two of the British makers, however, construct a high-speed re-saw with provision for flatting as well, with a horizontal roller feed and return motion specially for this purpose in addition to the vertical feed for deeping. Such machines are equally efficient for either purpose.

The best foundation is a plain concrete slab and deep excavation is unnecessary, as no part of the machine need be below the floor except the lower portion of the saw pulley and possibly a small portion of the driving pulley.

(2) You will require sharpening, setting, swaging and side-dressing appliances; anvil, hammers and rolls for tensioning; brazing and patching outfit, and certain appliances for facilitating the manipulation of these long blades.

(3) The output depends (a) on the make of the machine and (b) on the diameters of saw pulleys and the blades used.

The largest of these machines are sometimes speeded up to 200 lineal feet per minute. We have known a higher feed than this with a powerful machine when working on comparatively shallow material, say a 7 in. deal.

The actual space occupied by the machine should be approximately 9 or 10 ft. by 6 or 7 ft. That required for the feeding-in and taking-away appliances depends entirely on your conditions, with which we are unacquainted. For anything over 100 ft. per minute automatic gear for these purposes is certainly desirable.

(4) We cannot advise you on this point because the prices of different makers vary considerably, as also do the machines they recommend. Much depends also on the outputs you wish to attain. Here we can only say in the abstract that it is useless to go in for band re-sawing unless it is done very thoroughly. When this is done it has proved itself to be the most rapid and efficient of re-sawing methods. We would recommend you to obtain expert advice as to points 3 and 4, as a comparison between what you are doing and what you require to do, and your facilities for doing it, can only be ascertained by a knowledge of the actual conditions, and detailed advice cannot be given without this.

Damp on Ceilings.

SIR,—One can appreciate Mr. Matthews' surprise at finding the discoloration in only two of his rooms, and the fact that he lives in a district within the influence of the sea air might have accounted for this, as sea sand might have been used in part of the plaster work. But as he says that he lives where there has been no rain for several days, one must look for some other reason as a solution to his problem. He does not say what is the material covering his roof, but from my knowledge of the district I should believe it to be tiles. He is further perplexed by the fact that though the rooms, in which the discoloration showed, face in different directions, the effect was the same in both of them, yet not in any of the other rooms. The point is a good one, and one which, if the solution I have in mind be the correct one, can only be overcome in one way. I do not know the plan of the house, but I think it is possible that, though the rooms face at right angles, yet the roof covering these two rooms may be in one slope, and that of course facing in only one direction. If this is so my solution may prove to be the correct one.

Though there was no rain in the district it is highly probable there was snow. If this should prove to be the case, and as in most other parts of England this was accompanied by a gale from the east, a gale of such force that it blew the snow through door and window rebates, then it is quite possible that the snow, whilst in such a gale it would not be allowed to settle on the roof anywhere where it could be seen, yet it could and most likely would be blown underneath the laps of the tiles, and if there were no building paper under the tiles the snow would accumulate over the ceilings of any rooms under that slope of roof facing the gale, no matter how the rooms themselves faced. Probably the slope of the roof over these two rooms is all one, and that there is no waterproof building paper under the tiles, if tiles they be. J. C.

SIR,—Mr. Ernest Matthews' letter breathes so much the spirit of Mark Tapley, "coming out at his strongest" in adversity, that one feels one must do something for him.

The ceilings of his north and east rooms are perhaps under portions of the roof which are sheltered from the mid-day sun, while the remainder of his house probably gets its full share. After a cold spell of weather these ceilings therefore get thoroughly chilled and remain so for a time even after a change to milder and more humid weather. The air, saturated with water-vapour is quick to yield up its moisture in the form of condensation upon any cold surface into which it comes in contact, as the lowering in temperature renders it incapable of holding its full quota. Hence the damp ceilings. The walls, on the other hand, are kept warmer by the warm air of the house, and being nearer the temperature of the mild air there is therefore no condensation, or no more porous plaster can cope with by absorption.

Probably Mr. Matthews has noticed his perplexing phenomenon during some such weather conditions as indicated above, when condensation is inevitable unless specially guarded against.

Further, if his windows are opened daily the prevailing south-west winds will help to dry out the rooms that face south and west.

There may, of course, be other influences at work at which it would be impossible to guess without more information, but I think I have probably touched the key to the mystery.

If the trouble is very serious a little heat in the affected rooms is all that is required, such as a small ruby-glow oil lamp, unless it is felt that the adoption of central heating is not prohibitive, which is the sure cure for such worries as these. "SYMPATHISER."

Solid and Hollow Floors.

SIR,—I have followed with keen interest the correspondence in your columns on solid and hollow ground floors. My experience concerning the types of floors under discussion may be of interest. I have just finished a big housing scheme in which both types of floors were laid, and I would recommend most emphatically the use of hollow ground floors in preference to solid.

The question of cost is in favour of solid floors, but the cost is more than counterbalanced by the quicker method of constructing hollow floors. I have found that in most cases the tendency in solid floors is to dampness, even with a coating of tar and pitch over the breeze.

Southport. H. V. B. THORINGTON.

SIR,—Two of your correspondents who reply to this inquiry lean to the view that if both are properly constructed the advantage in cost is with the solid floor. Except in cases where the floor level is several feet above solid subsoil the hollow floor involves the entirely extra cost of the excavation, the brickwork in sleeper walls, floor joists and wall plates. The site concrete is equally necessary whether it serves as a foundation for the sleeper walls or directly to receive the floor boards or other surface finish. In King's Lynn, mostly built upon reclaimed ground, the subsoil is waterlogged at the depth of a few feet. Many of the roads are made up above the original ground level, and in the houses put up by some of the speculative builders the sleeper walls are built directly upon the earth surface and, despite local by-laws, the surface or "site" concrete has been entirely omitted. As a consequence, nearly every house so constructed requires within a few years the entire renewal of the timber portions of the ground floor construction. When the boards are taken up, it is not unusual to find a pool of water that has drained in from the higher soil banked against the outside walls. In such cases it would obviously be better to fill in the space under the floor and cover the site with a layer of impervious concrete upon which the material forming the floor surface is laid. The level of the subsoil water, or "water table" as it is sometimes called, fluctuates with rainfall, and when this ground water rises it forces out of the earth the noxious gases which are the product of decaying vegetable matter. The exclusion of these gases from the buildings we occupy is a very important function of site concrete, and because of this poor concrete does not safeguard the health of the occupants.

King's Lynn. L. E. W.

Trade Union.

SIR,—Would you kindly let me know what would be the correct or a suitable trade union for an assistant to clerk of works on a building job to belong to ? E. A. YOUNGASH.

[REPLY.]

An assistant clerk of works should possess the certificate of the Carpenters' Company for sanitary building construction. With this, other things being equal, he would be elected to Associate membership of the Incorporated Clerks of Works' Association.

Building Apprentices.

SIR,—We are considering taking apprentices for the bricklaying trade, but have no acquaintance with the procedure, nor with the form of agreement needed.

London. GARSUBIL, LTD.

[REPLY.]

The question of apprenticeships is left in the hands of the local bodies of the Federation of Building Trades' Employers of Great Britain and Ireland. We would, therefore, refer you to the London Master Builders' Association, 48, Bedford-square, London.

Building Costs.

SIR,—I should be glad if you could let me know which would work out cheaper, a four-story factory or the same amount of accommodation spread over one floor only. The premises would be required for a large printing works, and the question as to the cost of land does not come in, as the land is already available.

"ESSEX."

PRACTICAL DESIGN FOR BUILDING CONSTRUCTION—IV.

AN ELEMENTARY EXPLANATION OF THE APPLICATION OF THE THEORY OF CONSTRUCTION TO PRACTICAL DESIGN.

By EWART S. ANDREWS, B.Sc., M.I.Struct.E., A.M.Inst.C.E.

SECTION I. WALLS AND FOUNDATIONS.

(*Continued.*)

Examples of Foundation Calculations: (1) *For Steel Stanchion.*—As an example of a calculation of the simplest type, we will take the case of a concrete base required for a steel stanchion carrying a load of 100 tons upon a site where the soil pressure is not to exceed 1 ton per sq. ft.

In the first place, we have to find the necessary size of the base plate of the stanchion; this is determined by the allowable stress upon the concrete. The L.C.C. Steel Frame Act states that "the pressure on concrete foundations shall not exceed 12 tons per sq. ft." This limitation of the stress on the concrete may have been justified in the early days of concrete, and may be justified to-day if care is not taken that the concrete be properly proportioned—in other words, that only the material optimistically called "builders' concrete" will be used.

For well-graded Portland cement concrete of the 1:3:6 mix a conservative figure for the allowable compressive stress or pressure on the concrete is 18 tons per sq. ft., and for the 1:2:4 mix 25 tons per sq. ft. may safely be taken.

In our case we will assume a pressure of 18 tons per sq. ft.; we shall, therefore, require $\frac{100}{18}$ = 5.6 sq. ft. approximately for the bearing area of the base plate; a base plate 2 ft. 6 in. square gives an area of 6.2 sq. ft., and will be regarded as satisfactory.

We next come to the calculation of the size of the concrete base; this depends upon the permissible pressure on the soil. In our case the resistance of the soil is poor, and must not exceed 1 ton per sq. ft. The spread will, therefore, have to be considerable, and the weight of the concrete block itself will be at least 20 per cent. of the load carried (*i.e.*, 20 tons in our case).

In making our calculation for the pressure in the soil we have to allow for the weight of the foundation itself in addition to the weight transmitted by the stanchion, so that we have to provide for a load of 100 + 20 = 120 tons.

Allowing for 1 ton per sq. ft., we shall require a base 120 sq. ft. in area—base 11 ft. sq., as shown in Fig. 6 will just do this.

Adopting the rule that the angle of dispersion for good concrete may be taken as 45 degrees, we see that the depth of the concrete must be equal to the projection of the concrete over the base plate—*i.e.*, 4 ft. 3 in.

This comes a deep base, and we must now check the weight of it. Taking the weight of concrete as 140 lbs. per cub. ft., we shall have—

Weight of base in tons—

$$= \frac{11 \times 11 \times 4.25 \times 140}{2240}$$

$$= 32 \text{ (roughly)}$$

Our total weight therefore is 100 + 32 = 132 tons and to keep the soil pressure quite within the limit of one ton per square foot the footing would have to be extended to 11 ft. 6 in. square and the depth increased by a further 3 in.

This is a case in which a reinforced concrete base would be much more economical, the depth of the base could be reduced to 18 in. and the combined load and weight of base would then be so much reduced that the spread could be slightly reduced below 11 ft. square instead of having to be increased. In addition to the saving in the cost of the concrete—against which has to be placed the cost of the reinforcement; although this will be less than the saving in the concrete—we have the saving in the cost of the additional excavation.

Reinforced concrete bases are in general less costly than steel beam grillages and quite as efficient; we hope to be able to deal later in this series of articles with calculations for reinforced concrete.

(2) *Calculations of Pressure below Footing for Cavity Wall.*—We will now investigate the maximum pressure on the soil beneath a concrete footing for a cavity wall for a small house. In this case it was desirable to avoid if possible extending the footing beyond the line of the wall and the arrangement shown in Fig. 7 was proposed.

Considering a foot length of the wall and footing, the load W1 coming down the centre of the outer skin of the wall was 840 pounds, and

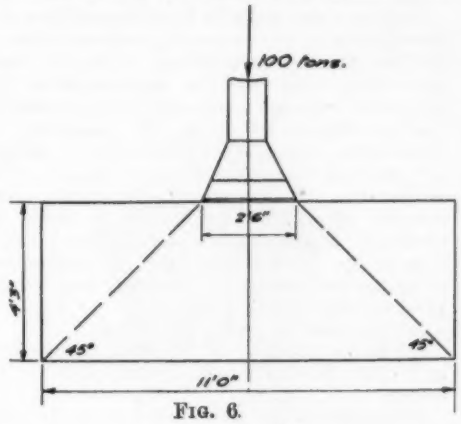


FIG. 6.

that W_2, coming down the inner skin, was 1,450 pounds.

The weight W of the concrete slab footing was 3 × 140 = 420 pounds.

Our first problem is to find the line of action of the resultant pressure P and the load point L.

We do this by the *Principle of Moments*, which states "that the moment about any point of the resultant of a number of forces is equal to the sum of the moments of the separate forces about the same point."

We choose the point X as a suitable point about which to take moments and proceed as follows:—

Total pressure P = 840 + 1450 + 420
= 2710 lbs.

Moments about X.

W_1 = 840 × 2.25 = 1890
W_2 = 1450 × 8.75 = 12690
W_3 = 420 × 18 = 7560

Sum of Moments 22140 pound inches.

Now the moment about X of the pressure P.

= P × LX = 2710 × LX

∴ 2710 × LX = 22140

i.e. LX = $\frac{22140}{2710}$

= 8.16 inches.

This is a case in which the pressure is eccentric but outside the "middle third," so that the distribution of pressure is given by a triangle as indicated in Fig. 5.

The base of this triangle will be equal to 3 times PX = 24.5 inches, or 2.04 feet.

To find the maximum intensity of pressure, we multiply the total pressure by 2 and divide by the base of the pressure triangle.

This gives:—

Maximum pressure on soil—

$$= \frac{2 \times 2710}{2.04}$$

= 2650 pounds per square foot.

This is more than could be allowed on the particular site namely, one ton per square foot.

Very little advantage would be obtained by extending the footing further inwards because although this would increase the moment of the forces about the point X and tend to move the point L further away from the point X, it would increase at the same time the total pressure. As it is, the footing has already been extended inwards to an extent which is probably greater than economy would justify. If, for instance, we reduced the concrete to 2 ft. wide the soil pressure would only come very slightly in excess of that previously obtained. The only practical course to follow is to extend the footing slightly beyond the edge of the outer skin of the wall; this will increase considerably the base of the pressure triangle and thus reduce the maximum pressure, since the area of the pressure triangle, which represents the resultant pressure on the soil, will remain the same in the two cases.

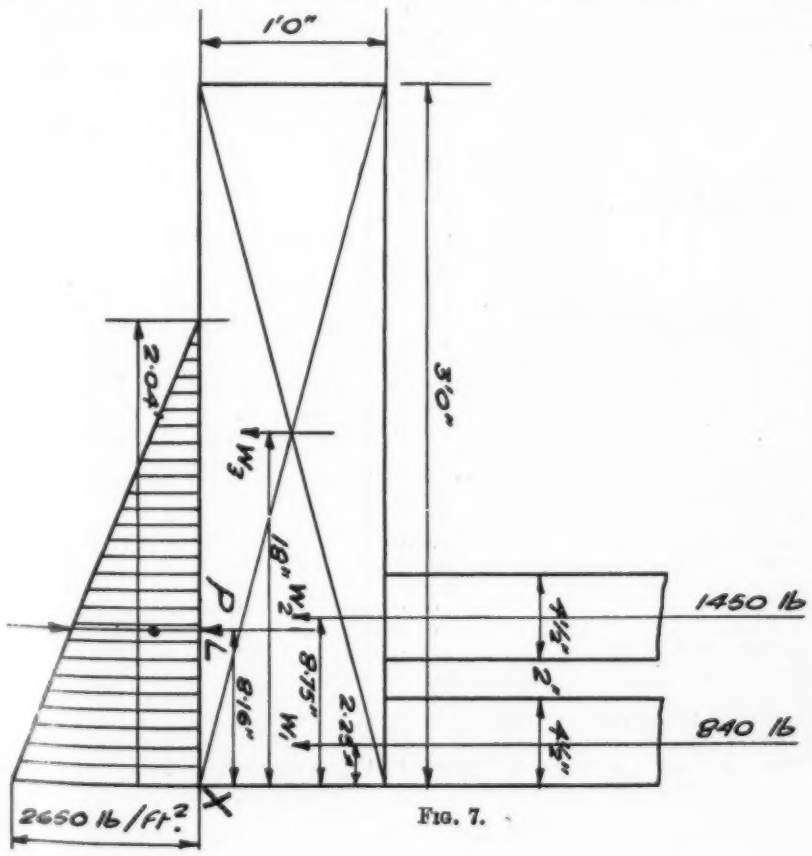


FIG. 7.

THE BUILDING TRADE.

THE COST OF BUILDING.

By T. P. BENNETT, F.R.I.B.A., Hon. F.I.O.B.

COMMENT was made in a former article upon the variation in the value of p.c. items disclosed by *The Builder* competition. In some cases these differences may be accounted for by variations in design or quality, as in the case of kitchen ranges. In others the possibility of variation is much less marked and in the design of baths and closet pans, there would seem to be ample data for the production of standard patterns of specified quality which would be obtainable at the low price which mass production brings. It is evident that standardisation in connection with house building may be applied broadly in two ways :—

(a) In connection with the design.

(b) In connection with certain mechanical and other fittings which involve little or no design.

All architects and most other people condemn standardisation which comes under the first heading. The imagination is rightly appalled at the contemplation of any possibility of a return to the rows of "brick boxes with slate lids" of thirty or forty years ago. It is true that standard steel sashes have been produced which have been used very widely without any suggestion of sameness of design and certainly with large saving in cost. It will probably be accepted that this employment of standardised units has reduced the cost of building without any great detriment to design and only slight damage to the temper of the architect. Upon the other hand, the standard sash has not affected the manufacture of special steel sashes of a great variety of shapes and patterns which are automatically used in better-class work and work where the cost may legitimately give way to an element of distinction.

The standardisation of the steel sash has had its counterpart in a parochial way in the standardisation of wood sashes for use in individual housing schemes where a designer has voluntarily provided himself with sashes which he designates "A," "B" and "C," and has used these sashes in many variations in design.

There are many other units of building which might be standardised with great advantage, the principal being :—R.W. gutters ; R.W. pipes ; W.W.P.s ; Baths ; Lavatory basins ; Water-closet basins ; Manholes ; Water and gas pipes ;

None of these items involves the question of sameness or monotony because even with the enormous variations in detail which at present exists, the general aspect of one R.W. gutter is very similar to that of another, and even baths have no very great individuality.

To standardise and lower the cost of these tems, several things are necessary :—

1. A sound, reasonable specification.
2. A sound, but economical, design.
3. General acceptance of the standard.
4. The use of the standard article must be as wide and complete as possible.

By referring to the list of articles given above, it will be seen that these four points are quite within the reach of a very ordinary article and that there would be no apparent difference whatever in the appearance of the fittings used in a cottage of the kind most urgently needed to-day, whether the articles were standardised or not. While, however, the result is the same in each case, the effect upon the manufacturer is vastly different. At present every manufacturer tries to be different from his neighbour, so that his articles, and his alone, shall be used. He probably makes several kinds of baths and w.c. pans at a similar price so that he can offer his patrons a selection, and by this means has to manufacture and maintain a number of patterns and to carry a large stock and is prevented from launching out into an attempt at low production costs by working on a large scale because there is no certainty of a large demand for any one specified article. The Engineering Standards Committee state that recent makers' lists of manhole covers indicate the manufacture of 38 different sizes and 84 weights. The variations in baths, W.W.Ps. and other items must be almost as great.

If, therefore, the Ministry of Health, the local authorities, the railway companies, the architectural profession, and other interested bodies were to create a standard specification for all articles in common use and invariably specify the standard article for suitable work the demand for a few recognised articles would in a short time, reduce the cost substantially and at the same time increase the quality. One maker stated that if he were assured of a demand for a standard article of the kind referred to he could produce it 20 per cent. below the price and 30 per cent. above the quality of any similar article in the market to-day. With the use of several types, kitchen ranges could be standardised in a similar manner without reducing the choice of the prospective occupier of the house below that now available.

It is common knowledge that the production of low-priced commodities in every walk of life has only been possible because of the introduction of a system of mass production in the factories, and one of the means which has yet to be fully employed for providing low-priced houses is the use of mass production for many of the parts of the structure.

The Ministry of Health must, perhaps, be the pivot upon which the movement must revolve, but co-operation is required from professional bodies, manufacturers and merchants, and large users such as the Local Councils. The Engineering Standards Committee are investigating the standardisation of gutters and have already formulated the basis upon which standardisation could proceed for the other articles mentioned. Their efforts, however, will fail in the important matter of cheapness of production if the standard is insufficiently rigid and if architects and others, who are primarily responsible for the use of the article, do not universally adopt the standard arrived at.

When goods have no mark our Trade Mark laws provide for nothing to distinguish British made from foreign, but if they have any mark at all they must be stamped with the name of their country of origin. If, therefore, "British Standard" or "B.S.S." is universally stamped upon fittings, foreign copies will be known and many patriotic users will insist upon the supply of British fittings which have been made in Britain. In Canada and America there is a standard tube for gas, water or steam, and if this standard were forcibly adopted here it would automatically force some English makers to open up their overseas trade.

In preparing this article much assistance has been received from the articles of the Engineering Standards Committee, and from Mr. Percy G. Donald, whose wide experience and knowledge in the matter give weight to the energy and enthusiasm with which he has advocated its adoption. A paraphrase of his words summarises the most important aspects :

(1) Standardisation of fittings does not interfere with the man who can afford to pay for an article of special character or with matters of design where cost is a secondary consideration.

(2) A standardised article is a security inasmuch as it has been designed by experts to secure its soundness of type, weight, efficiency and low cost of manufacture.

(3) It gives the best possible article for the lowest possible cost.

COMPARISON OF PRICES OF BUILDING MATERIALS, &c.

WE publish a table giving the prices of the principal building materials on February 1, as compared with the price for January 1, 1924.

Material.	Jan. 1, 1924. £ s. d.	Feb. 1, 1924. £ s. d.	Fall. %	Rise. %
Bricks—				
Best Stocks	3 19 0	3 19 0	—	—
Flettons	2 13 3	2 13 3	—	—
Glazed	22 0 6	22 0 0	—	—
Thames Ballast	0 10 6	0 10 6	—	—
Thames Sand	0 15 6	0 15 6	—	—
Shingle (¾ in.)	0 14 0	0 14 0	—	—
Portland Cement	2 18 0	2 18 0	—	—
Ground Blue Lias Lime	2 13 6	2 13 6	—	—
Grey Stone Lime	2 10 9	2 10 9	—	—
Bath Stone	0 2 9½	0 2 9½	—	—
Portland Stone	0 4 4	0 4 4	—	—
Good Sound Building Timber—				
4 in. × 11 in.	34 0 0	34 0 0	—	—
3 in. × 7 in.	26 0 0	26 0 0	—	—
3 in. × 11 in.	34 0 0	34 0 0	—	—
2 in. × 11 in.	34 0 0	34 0 0	—	—
2 in. × 7 in.	26 0 0	26 0 0	—	—
3 in. × 4 in.	24 0 0	24 0 0	—	—
Slates—				
24 in. × 12 in.	37 12 6	37 12 6	—	—
22 in. × 12 in.	34 0 0	34 0 0	—	—
R.S. Joists	13 10 0	13 10 0	—	—
Iron—				
Common Bars	13 10 0	13 10 0	—	—
Mild Steel Bars	12 10 0	12 10 0	—	—
Steel Bars	13 0 0	13 0 0	—	—
Cut Nails	20 10 0	20 10 0	—	—
Sheet Lead	41 10 0	42 10 0	—	2.41
Glass—				
15 oz. Sheet	0 0 3⅜	0 0 3⅜	—	—
21 oz. Sheet	0 0 5	0 0 5	—	—
26 oz. Sheet	0 0 6	0 0 6	—	—
Raw Linseed Oil	0 4 0	0 4 2	—	4.17
Turpentine	0 6 6	0 6 11	—	6.41
Ground English White Lead	56 5 0	57 0 0	—	1.33
White Lead Paint	79 10 0	81 0 0	—	1.88
Red Lead	43 0 0	43 0 0	—	—

BUILDING THROUGHOUT THE AGES.

A COURSE of lectures on "The Romance of Building Throughout the Ages," delivered by Mr. George W. Thompson to the junior members of the Amalgamated Society of Woodworkers, during last session, at Liverpool, aroused a considerable amount of interest in the building industry in that city. The lectures were accompanied by lantern slides, the number of slides employed being about 350, and sheets of descriptive notes and sketches served to provide the members of the course with a permanent record of the content and sequence of the lectures.

FIG. 1.

The first of the series dealt with the Prehistoric and Egyptian (fiftieth century to first century, B.C.) period, and from this lecture and the sketches which accompanied it we take the following:—

The Tree of Architecture showed that the art of building had been influenced at all times by (*a*) geography, (*b*) geology, (*c*) climate, (*d*) religion, and (*e*) history.

Prehistoric man imitated nests of birds and lairs of beasts. He built nooks formed of twigs and covered with mud, then huts of branches covered with turf. Later, hunters and fisherfolk dwelt in caves. Those living a settled life constructed crude huts. Tribes living a pastoral or nomadic life learned to use tents. Associated with this early art were monoliths, dolmens, cromlechs, beehive huts, and lake dwellings.

Egyptian architecture belonged to a period when civilisation had reached a comparatively high state. The stages of evolution between prehistoric and Egyptian were lost in the mists of antiquity. Sphinx, pyramid, palace, temple and tomb with their hieroglyphics (picture stories) had survived through three to six thousand years, and revealed the story of war and peace, love and hate, and work and play

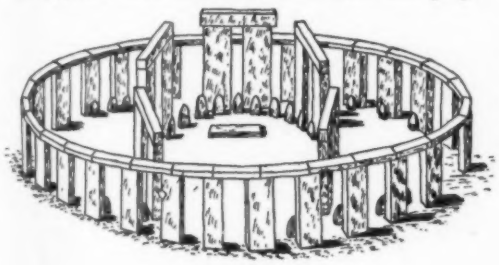


FIG. 2.

that slowly arose in the region through which flows the sacred Nile: "Flowing through Egypt like some grave, mighty thought."

Of the pyramids, erected from 3998 to 3721 B.C., Cheop's great pyramid rose 480 ft., covered 13 acres, and, it was thought, took 100,000 slaves 30 years to build. The despotism that massed men like ants had happily passed away, and to-day the power of 1,000 men might be found in a single machine. Pyramids might have possessed astronomical value. It was known they were used as tombs by the Pharaohs, who looked upon a dwelling-house as a temporary lodging, the tomb being the permanent abode. The architects and artificers of those wonderful structures were all forgotten, but their works would stand for ever as the most colossal art wonders of the world.

In the museums were Egyptian exhibits

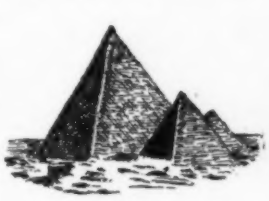


FIG. 5.

FIG. 6.

consisting of mummies, sarcophagi, sculpture, amulets, dolls, musical instruments, games, jewellery, seals, weapons, tools, toilet utensils, and pottery, and it should be observed that Nature suggested ideas for ornamentation, *e.g.*, ibis, vulture, scarab, lotus, papyrus, palm and feathers.

The accompanying illustrations are from the sheets of sketches shown at the lecture.

FIG. 7.

FIG. 8.

Figs. 1 to 4 are examples of prehistoric architecture.

Fig. 1 is a monolith, or menhir, one of which, at Carnac, Brittany, is 63 ft. high and weighs 260 tons.

Fig. 2 is a reconstruction of Stonehenge, in Wiltshire. The history of this group is unknown, and among the different theories as to its origin are that it is the burial place of Boadicea, and that it was a druid temple. It is also uncertain as to who built it, some authorities attributing it to the Romans, and others to the Danes. The diameter of the circle is 333 ft., and two of the uprights are over 22 ft. in height. It is most generally considered that Stonehenge dates from 1680 B.C. Constructions such as this are known as cromlechs.

Fig. 3 shows a beehive hut in the Isle of Lewis, and is the type of building which formed the dwellings of the Early Britons.

Fig. 4, a tent, was used by shepherds and those leading a pastoral life, these were formed of branches and bark of trees obtained probably from the birch tree.

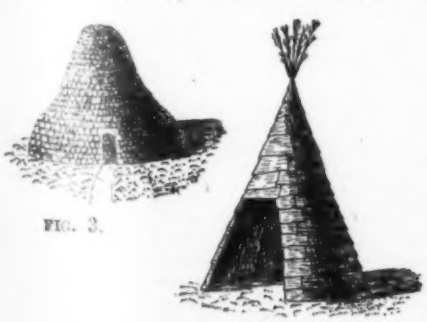


FIG. 3.

FIG. 4.

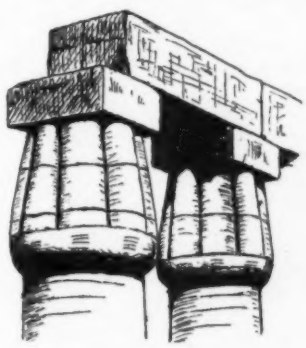


FIG. 9.

FIG. 10.

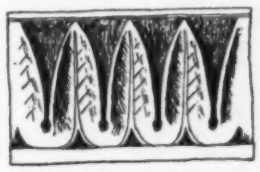


FIG. 11.

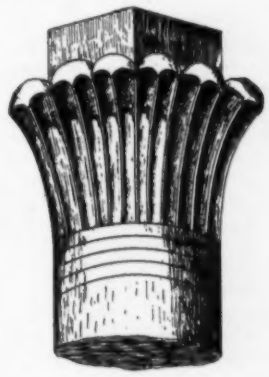


FIG. 12.

Some examples of Egyptian ornament and structures are depicted in Figs. 5 to 13.

The pyramids, which were erected over the tombs of Egyptian kings, are shown in Fig. 5.

Fig. 6 shows the Great Sphinx, which is in the form of a monolith with an animal's body and a human head. It is 142 ft. long and 65 ft. high.

Fig. 7 is the type of pylon situated at the entrance to Egyptian temples.

An obelisk is depicted in Fig. 8. An obelisk may be seen in London (Cleopatra's Needle), and there is a similar structure in Central Park, New York.

Fig. 9 is a capital of an Egyptian column based on the lotus bud.

A column capital based on the lotus flower is shown in Fig. 10, and a laurel leaf ornament in Fig. 11.

FIG. 13.

Fig. 12 illustrates a column capital based on the palm leaf.

Fig. 13 is a vulture with outspread wings, a symbol of protection.

The Egyptians employed as ornament natural objects such as the lotus plant, the symbol of fertility and abundance produced by the Nile when in flood, the palm and the papyrus. These are instructive as well as decorative, and much of Egyptian history may be learned from them.

Westminster Bank.

The annual ordinary general meeting of the shareholders of the Westminster Bank was held at the head office on January 24. Mr. Walter Leaf (the chairman) presided. The chairman, after a review of general conditions during the year under review, as revealed by import and export figures, observed that though the effect of a revival of trade had shown itself rather tardily, yet the evidence of the last quarter of the year was fairly unanimous in speaking of better conditions and hopeful prospects. Commenting upon the political situation, he said it was piquant and interesting; but for the business man not wholly unsatisfactory. Business wanted to be left alone; they had had enough of Government interference during the war, and had no desire to be made the subjects of rash experiments in economics, whether they took the form of deliberate inflation, protection, or capital levy. The Report was unanimously adopted.

BUILDING TIMBERS.

ON January 22, Mr. Alexander Howard lectured on this subject at the School of Building, Brixton. Mr. H. D. Searles-Wood, F.R.I.B.A., presided.

The lecturer said perhaps the most ancient use of timber was for building houses. This use was so old that, strictly speaking, it was unnecessary to speak of building timber, since the very word timber implied building. In Sanskrit, Greek, Latin, Gothic, and their own English the words timber and building came from the same root, and timber was originally simply material to be used for building purposes. In the past men built of timber the lake dwellings of which traces existed in England, in Switzerland, New Guinea, Cochin China and America. It was said that the South American Republic of Venezuela owed its name to the fact that the Spaniards on their arrival in a new world found on a lagoon a kind of village entirely built on wooden piles, which they called Venezuela, which meant a little wooden Venice.

Without for one moment forgetting the great national importance of supporting the best schemes for conservation and afforestation, so as to increase the Empire's timber resources, he wished to explain to those who were less informed, that at present, at least, there were ample supplies available for building timbers without any material changes. He believed there existed in the minds of many architects, engineers, and others, a general impression that the scope from which supplies could be obtained must be widely broadened. When they heard of developments from India, Burma, Borneo, Philippines, Malay, &c., they had not yet realised that there was no prospect whatever of any fresh supplies of softwoods for building to be obtained from these sources. A great new supply of hardwoods had already been opened up, and those who were clever enough, and who did not allow themselves to be influenced by trade interests and other arguments, and would accept without prejudice the new timber solely upon its merits, would find a great field open.

The lecturer then made a few comments on the following extracts from specifications which he had recently received:

1. "The whole of the timber deals and battens, &c., to be perfectly sound and well-seasoned, of the best quality obtainable and of approved brands, free from all sap, shakes, large, loose, or dead knots, and other defects, and sawn die square."

If timber of this description were really supplied the cost would be much too great, and would be moreover quite unnecessary. The architect probably received fourth quality, or, indeed, it might even have been fifth quality; but in none of the qualities would it have been free from sap-wood or other defects.

2. "The oak to be of the best approved description, of good figure, carefully selected, free from all imperfections, and to have been felled for at least three years."

They would notice particularly the last clause; as a rule the architect got absolutely fresh-cut timber from freshly cut trees, not carefully selected.

This specification should read: "Reasonably free from injurious defects. The scantlings to be cut from freshly-felled timber, and thoroughly seasoned after cutting before use in the building."

The practice of continually asking for a quality or for a timber which could not be obtained, and consequently was not supplied, had the effect of making the conditions named useless, and so they were entirely ignored. How much better would it be to describe correctly what was required in a reasonable manner, and have it adhered to; this was what the American did.

Spruce.—The lecturer then spoke of the actual timbers which were employed in building construction, of which the most important were the soft woods—that was, the pines and the firs. The lowest in order used was spruce, or white, brought from Canada, America, Norway, Sweden and Southern Europe. Strangely enough, the use of spruce was common, and allowed by experts in Liverpool and on the north-west coast and in Scotland, but not allowed in London or the East Coast of England, and the South of England generally. Spruce was undoubtedly the least durable and the weakest wood commonly made use of for timbering.

Yellow.—The timber which was most used was what was known as Yellow, or Red, or Yellow Deal; or, in larger timbering sizes, Fir. It was, however, a pine which was commonly known by the name of Scots Pine. It was brought from Sweden, Russia, and, to a small extent, from Norway. It was impossible to over-rate the importance of getting this timber into the building in good, bright, dry condition. If this were accomplished, and the woodwork was well ventilated, it was difficult to say how long it would last.

Pitch Pine.—This timber came from the Southern States of North America. There was a great variety of quality, ranging from very bad to very high class. The best was a very fine building timber, while the lower qualities produced a bad timber.

Oregon Pine.—Another timber, known as Oregon Pine (which name, however, it was now desired should be abandoned in favour of the name Columbian Pine—Oregon being in America, and this wood coming from a British Dominion), also known as Douglas Fir, had come very prominently before the building world of late years. The trees grew to an immense height and girth, and, consequently, provided very long and large sizes, and on this account alone occupied a very important position in their list. The wood was also unusually free from large knots and other defects.

Larch.—Larch was a very reliable timber, quite insufficiently appreciated, and especially durable. The supply had always been small and intermittent, and it was probably on this account that it was little used or appreciated.

The lecturer then considered some of those hardwoods which were used for constructional work. Unfortunately, the list was too long to enable them to do more than touch the fringe of the subject. Among those which it had been possible to obtain in the past, that which had been most used was, of course, oak. He would probably give rather a shock to many when he said that under modern conditions he had come to the conclusion that oak was not a good wood to use now for constructional work.

First, for what reason had it been used? The answer was, for its greater strength and durability. One could hear the owner proudly boasting that his roof was constructed entirely of solid oak. But what did they find? In transverse strength it was little better than Scot's Pine; while its undoubtedly greater tensile strength was not required in such works of construction. Regarding the durability of oak, they might ask, where did they find Scot's Pine eaten up by the death watch beetle, as they were told the Westminster Hall roof timbers were eaten? They must not forget that he was speaking of modern conditions. Perhaps, 600 years ago the architect was more practical than he was to-day; perhaps, only more fortunate. It was certain that his roof was open tiled and the wind blew through it. That, he thought, was the reason why the Westminster Hall roof lasted so long, and the attack of the beetle had been the result of stopping practically all ventilation during some minor repairs some time ago.

Pyinkado.—This timber came from Burma where it was known as Ironwood. Its weight—60–90 lb.—made it difficult to transport, because it would not float. These difficulties, however, had been largely overcome, and the timber was now obtainable, in large sizes and good lengths, in immense quantity at a very moderate cost. It was one of the most durable, if not *the* most durable wood in the world. When comparatively fresh it could be sawn and worked easily with tools, but it became so hard with age that it turned the edges of all tools.

African Oak.—This was a dense, very hard, and very durable timber. Unfortunately, the supplies were very scarce, and the timber which was now often called African oak was not of the right species. In the late eighteenth century and the beginning of the nineteenth it was very highly thought of. Amongst the works in which it was used was Nelson's battleship the *Foudroyant*, which was captured from the French; the staircase and other constructional work in the old Post Office at St. Martin's le Grand, and in some old wooden cranes on the Thames bank dating back to Nelson's time.

Greenheart.—This wood came from British and Dutch Guiana. It had a strong, firm, hard grain. For some purposes he thought Pyinkado or African oak would take precedence of this wood; of course, they were all exceptionally strong timbers. Greenheart also took first place as a teredo-resisting wood, though jarrah probably ran it close.

Jarrah.—This wonderful Western Australian timber ranked very high as a strong and most durable timber for piers, bridge work, wharf and piling fronts, staging, and all other works of construction where strength, hardness, and durability were required.

Blue Gum.—This timber came from Australia and Tasmania. It had also been planted in India, Africa, and South America, in which countries it grew amazingly quickly. It was very strong and hard and exceedingly durable under many varying conditions.

Wana.—This timber had, as yet, only been received from Dutch Guiana, though as the forest trees were very much of the same species he expected they could get this from British Guiana also. It was very strong and, he believed, exceedingly durable.

Teak.—There was probably hardly any wood so well known and appreciated as teak, which in many respects occupied a unique place in the timber world. It was very durable, and for many purposes, notably for decks and ship-building generally, and for out-of-door work, its value exceeded that of any other.

It must be noted that he was not speaking of timbers which, although they might be said in some respects to be used in a constructional manner, were also required for decorative work, for window frames and joinery, for instance. For this dual use teak easily came first.

Cypress.—This was the Louisianan cypress, which greatly excelled in durability. It was a coniferous wood, and consequently some might classify it with the softwoods. In density and hardness it was perhaps midway between a hardwood and a softwood. In practical usage, however, for building purposes, it could only be considered a hardwood, for while it was not so strong as the other hardwoods, it possessed with a fair amount of strength a most remarkable durability.

British Oak.—So long as no sapwood was included and the woodwork was thoroughly ventilated this would be found a fairly good constructional hardwood. In his opinion, however, there were to-day many better hardwoods obtainable which, considering the high cost of construction and the comparative cost of material, put oak into rather a back place, especially since there appeared to be such an epidemic of the death watch beetle.

Karri.—This very fine Western Australian wood was exceptionally strong and, under some conditions, very durable. It must be used with care, however, and it had its limitations.

Sweet Chestnut.—This was a wonderfully durable timber with quite fair strength for constructional work. It was, however, rather difficult to get regular and sufficient supplies of sound timber, the prevailing fault being that the trees developed very bad splits.

Gurjun.—This splendid timber from India, besides being strong and durable, was obtainable in very long lengths and in very large sizes free from defect. It had been found to be stronger than British Oak, and when used in shell-filling factories during the war, was considered by experts to be the hardest and best timber which had been submitted for this use. Very large quantities had been absorbed for heavy constructional work of all kinds during the last three years.

In conclusion, the lecturer said the subject was full of interest and attraction, and the more they studied it the greater would be found the field for observation, and if he had stimulated their interest to even only a small degree, he was well repaid.

THE HOUSING ACTS: RECOVERY OF EXPENSES

WE may note a further case, Adams *v.* Tuer (*Weekly Notes*, October 27), which turns on the provisions of the Housing Acts, where the local authority consider a house unfit for human habitation, and after notice to and default by the owner, do the work themselves. The Auckland Rural District Council, acting under section 28 of the Housing Town-Planning Act, 1919, on September 11, 1920, had served notices on the owner of certain houses in the district requiring her within twenty-eight days to execute certain specified work to render the houses fit for human habitation, and the notice not having been complied with, the Council, through a firm of builders, did the work themselves, and subsequently served a demand upon the owner for the sum of £342 0s. 9½d. in respect of the repairs executed and, payment not being made, proceedings were taken against the owner under section 28 subsection (3) to recover the same.

In the proceedings before the court of summary jurisdiction it was contended that the sum had not been properly incurred under section 28. It was said the amount charged for labour was excessive, that all the work charged for had not been done, and that work was done which was not necessary to render the house reasonably fit for human habitation. Evidence was given before the justices, and they found as facts that the amount charged for labour was excessive, that all the work charged for was not done, and that the Council did not incur the full sum of £342 0s. 9½d. in making the houses in all respects fit for human habitation, and that part of the work was unnecessary for that purpose, and they fixed the amount at £250 10s.

The Council, on appeal to a Divisional Court, contended that the magistrates were compelled to make an order for the payment of the full sum, and had no power to decide whether the work was, in fact, necessary, the owner's only remedy being by way of appeal to the Minister of Health under section 15 subsection (6) of the Housing Town-Planning Act, 1909.

It has to be borne in mind that in *ex parte* Rush (1922 2 K.B. 28; *The Builder*, July 21, 1922) it was held that the appeal to the Minister of Health contained in section 15 of the Act of 1909 was incorporated in section 28 of the Act of 1919, and that, after that decision, the Minister of Health gave notice that pending the amendment of the Housing Acts, all notices served by a Council under section 28 of the Act of 1919, requiring the execution of works and any demand for the payment of expenses, should contain a note that an owner has an appeal to the Minister of Health.

The Divisional Court held that the right to recover expenses under section 28 was a right to recover only such expenses as were incurred under and in pursuance of the section, that is, the expenses of work necessary to make the houses reasonably fit for human habitation, and the justices had not misdirected themselves in point of law, and the Council's appeal must be dismissed.

We dealt with this question in a note on the case Ryall *v.* Hart (*The Builder*, May 18, 1923) where, under section 28, the same point was raised, but in connection with the reasonableness of the time allowed by the notice in which the work had to be performed, and the Court held that, although under section 15 subsection (6) of the Housing Act, 1909, the owner could appeal to the Minister of Health against a notice requiring the work to be done, or against a demand for expenses incurred in doing the work, that subsection did not make the decision of the Minister final, or prescribe that, if an owner did not appeal to the Minister, the claim for expenses could not afterwards be questioned.

This legislation has caused considerable difficulty, for it will be remembered that in Ryall *v.* Cubitt Heath (1922 1 K.B. 275; *The Builder*, February 24, 1922) a different point was raised. There the proceedings were also being taken under section 28 of the Housing Act, 1919, and the work having been done by the local authority, proceedings were taken under subsection (3) to recover them. The defence was that the time specified in the notice was not reasonable, and this was upheld by the magistrate, but on appeal it was contended that the magistrate had no power to consider this question, and he should have made the order for the expenses, and then there was an appeal to Quarter Sessions under section 35 of the Housing Act of 1890, but a Divisional Court held that that section did not apply, as a "notice" under section 28 of the Act of 1919 was not the same as an "order" under section 35.

Sections 14 and 15 of the Housing Act, 1909, had to be read as one with section 28 of the Housing Act, 1919, and, as we showed in the case of Arlidge *v.* Tottenham Urban District Council (1922 2 K.B. 719; *The Builder*, February 28, 1923) and *ex parte* Rush (1922, 2 K.B. 28; *The Builder*, July 21, 1922) the Courts have experienced difficulty in thus interpreting them. Section 14 and 15 of the Act of 1909 apply to contracts of letting, for habitation of a house or part of a house, and the word "landlord" is used in those sections, and there is a limit of rental value. Section 28 of the Act of 1919 applies to "any house suitable for occupation by the working classes" and the word owner is used. In Arlidge's case it was pointed out that, reading the two Acts together, there was risk of overlapping, but since the earlier decisions we have referred to the Housing Act has been passed, and it may be useful to again consider how that Act affects the points raised in the former cases. When the Bill was before Parliament we drew attention to this question in an article in our issue for April 27, 1923.

The new Act is dated July 31, 1923, and section 10 relates to sections 14 and 15 of the Housing Act, 1909. Subsection (1) provides "Sections 14 and 15 of the Housing Town-Planning, &c., Act, 1909, shall have effect as respects letting for habitation after the passing of this Act as though (*a*) paragraph (*b*) of the said section 14 had been omitted, and (*b*), in paragraph (*c*) of the said section 14 for the word "Sixteen" there had been substituted the word "twenty-six." These amendments make section 14 read: "In any contract made after the passing of this Act for letting for habitation a house or part of a house at a rent not exceeding (*a*) in the case of a house situate in the administrative County of London £40 (*c*) in the case of a house situate elsewhere £26, there shall be implied a condition that the house is at the commencement of the holding in all respects reasonably fit for human habitation, but the condition aforesaid shall not be implied when a house or part of a house is let for a term of not less than three years upon the terms that it be put by the lessee into a condition reasonably fit for occupation, and the lease is not determinable at the option of either party before the expiration of that term."

Section 15 of the Act of 1909 contains the provisions for enforcing the observance of section 14. Subsection (1) provides that the last foregoing section shall take effect as if the condition implied by that section included an undertaking that the house shall, during the holding, be kept by the landlord in all respects reasonably fit for human habitation. Subsection (2) empowers the landlord or the local authority under certain conditions to enter the house for the purpose of viewing the state and condition of the house. Subsections (3) to (5) apply the general machinery for requiring the work to be done which is necessary to render the house reasonably fit for habitation and in default enabling the local authority to do the work and claim the expenses, and subsection (6) contains the right to appeal to the Minister of Health.

The whole of these subsections (3) to (6) are repealed by section 10 subsection (2) of the Housing Act, 1923. This subsection provides "Subsections (3) to (6) of section 15 of the Housing, &c., Act, 1909 (being provisions which are virtually superseded by section 28 of the Housing, &c., Act, 1919), are hereby repealed and the said section 28 shall have effect subject to the following modifications:—

Then it provides that (*a*) a notice given by a local authority under that section shall specify what works are to be deemed necessary, and in addition to serving the notice on the owner the local authority may serve copies on any persons "having an estate or interest in the premises superior to that of the owner."

Paragraph (*b*) gives the appeal to the Minister in much the same terms as subsection 15 of the Act of 1909, except that the time within which the appeal can be made can be lengthened by the Minister and there is a new proviso which is very important, viz., "Provided that no appeal against such a demand or order shall lie" (that is the demand or order in respect of expenses incurred) "if and so far as the appeal raises any question which might have been raised on an appeal against the notice itself, and subject to such appeal the notice demand or order shall be binding and conclusive as to any matters which could be raised on such appeal." This paragraph clears away the doubt which existed and which was the subject of decision in *Ex parte* Rush and Ryall *v.* Hart that there is an appeal to the Minister under section 28 of the Act of 1919, for it gives this appeal, but the proviso may raise a question whether that appeal is not to be the only means of obtaining redress, thus overruling the decisions in Ryall *v.* Hart and Adams *v.* Tuer that a remedy remains in the Courts although that appeal to the Minister has not been resorted to.

We imagine that the intention of the proviso was not to alter the law as laid down in those decisions, but simply to provide that every question which could be raised before the Minister on appeal as to the "notice," as for instance the reasonableness of the time allowed, should be raised then and not subsequently on the demand or order for expenses incurred, but the discretion given to the Minister as to the time in the notice, and the wording of the proviso "no appeal shall lie" and "subject to such appeal the notice demand or order shall be binding and conclusive as to any matters which could be raised on such appeal" will seem to make it arguable that the appeal to the Minister is now the only remedy.

It may be noticed that in section 15 of the Act of 1909 the word "landlord" is used whereas in this new subsection conferring an appeal the word "owner" is inserted. All the Acts have to be read as one, and no doubt the word "owner" will include the "landlord," but this is a piece of legislation by reference giving practitioners unnecessary trouble. In the decision in Arlidge's case the Court attached a good deal of significance to the distinction between "landlord" and "owner" in the two Acts of 1909 and 1919 in connection with the interpretation of the sections.

In several of the cases we have referred to the Judges have commented severely on the confused nature of this legislation relating to Housing, and in Arlidge's case Mr. Justice Lush was reported as saying that probably no Acts were more difficult to interpret except perhaps the Rent Restriction Acts, and from the points we have considered above it will be seen the new Housing Act has certainly not smoothed away difficulties but may even have increased them by throwing doubt again on some points which had been cleared up by the decisions delivered in the Courts.

Town Planning.

The Minister of Health will shortly issue a supplement to the Model Clauses published for use in the preparation of Town-Planning Schemes. Provisions are included for enabling the regulation of streets in a town-planning area to be dealt with wholly in a scheme, instead of partially in a scheme and partially in by-laws, thus, it is hoped, avoiding a dual system of control and introducing a desirable simplification. To be obtained direct from H.M.S.O., Kingsway.

MODERN BUILDERS' MACHINERY.

By STAFFORD RANSOME.

No. IV. ELECTRICAL AND STEAM POWER.—Part I.

Before considering the wood-converting tools themselves it is necessary to clear the ground by dealing with the subject of driving them. This question has so direct and vital a bearing on the eventual working policy that, unless the relative virtues of the various prime movers are grasped at the outset the purchaser may easily make a big blunder in equipping himself and in arranging his factory. The advent, and particularly the rapid developments of the electrical drive during recent years have greatly widened the field of wood conversion, both by making it possible to work existing machines under conditions and in localities where they could not be driven by any other form of power and by permitting the designing and production of certain tools of a portable or other special character which but for electricity could not be worked at all.

For the medium and small builder the choice is virtually narrowed down to a question between steam and electricity. Gas power, which was popular even a few years ago, has receded with the advance of the electrical drive. If it is a question of procuring one's gas from a town supply it is usually far more expensive, for a given result, than electrical current from a similar source, and if the purchaser is to make his own gas by means of a suction or other producing plant he has to face, not only the first cost of that plant, but its fuel, upkeep, and maintenance. Then again, driving by gas power, however the gas may be produced, does not simplify the lay-out of the machines or reduce the intermediate transmissions any more than does the steam drive, and in this respect electricity has a great advantage over both.

Gas, Wind, and Water.

Comparing gas with steam, the former plant has the advantage of occupying less space and costing somewhat less for labour. Steam, on the other hand, is far more elastic as a power distributor, and thereby is better suited in some respects to the peculiar requirements of wood-converting tools where the load, *i.e.*, the power demanded by the machines, varies constantly and abruptly and very considerably. Steam has the further advantage over other forms of power in a wood-working shop of being able to use as a fuel the whole of the wood refuse made by the machines. For, although gas may be produced from wood, and there are sawmills which are driven by gas produced from that material, it is not as a rule found to be as convenient as steam for small mills, and it is beaten in price for both large and small mills by electricity.

Water power is, of course, worth consideration when available under suitable conditions and in sufficient volume, but this is so seldom the case that we need not deal with it here. Curiously enough, wind, which to the modern saw-miller appears preposterous as a motive power for his machinery, is still very largely used for primitive sawmills in Holland and elsewhere. But, although builders' mills are sometimes run on primitive lines, the one thing a builder must not risk is being held up in his work. Consequently he cannot rely upon the conditions of the weather for driving his machines. Thus we may rule out water and wind, and, in ordinary circumstances, we must regard gas as an occasional substitute for steam. The choice therefore lies usually between the electrical motor on the one hand, and the engine, whether steam or gas, on the other. For the large builder, or for anyone who possesses a large sawmill, this question does not arise, as the advantages of driving most, if not all, of his machines by electricity are unquestionable. Even if he is fully equipped with a steam drive, it is usually a sound policy to use that power for the generation of electrical current, and to distribute the power through motors to the individual machines or groups of machines.

In the first place he will be able to dispense with most, if not all, of his network of shafting, gearing, and belting, saving thereby the first cost, the power used in driving them, the inconvenience, and the running expenses in connection with upkeep, besides lubricants and lubricators. This point is made abundantly clear by the alternative schemes which will be shown in Part II of this article. The second great advantage to him is that he may readjust his entire lay-out of the machines so that the work can be carried on to the best advantage. He is untrammelled as to the positions of his machines as he no longer has to locate them to suit his line shafting. By such a readjustment he can often effect a very substantial and permanent saving in his working expenses and an immense saving in space. This is a point too often lost sight of by users who go on working year after year in a shop which, as time goes on, gets progressively congested. The result is that accidents increase, stoppages are more frequent, the labour bill is far in excess of what it need be, and the output far below what it should be.

Abolition of the Belt.

There is another very important factor which tells in favour of the electrical drive, and that is, that in doing away with belts, the quality of the work will be greatly improved. It seems like heresy to say that a belt drive is an abomination in a world which has been built up on the products of belt-driven machines in every imaginable industry. And yet, speaking theoretically, it is so, for the action of the belt is continually to tug at one end of the spindle, tending all the time to strain it and wear the bearings unequally, and, when forced beyond certain well-defined limits, either as to its speed or load, to lose its transmitting efficiency very rapidly. The belt owes its position as the most popular form of driving agent to the fact that until the direct-coupled motor came into being as a commercial proposition, it was infinitely preferable to any other known method, at all events for transmitting high speeds. Thus we may take it that as a general principle it is always policy, where practicable, to run a machine by means of a motor coupled direct to its spindle or to each of its spindles rather than by a belt or a series of belts.

From the above it would seem that with all these advantages it would be hardly necessary to consider seriously the question of adopting any but the electrical drive. There is, however, another side to the question, and it is one which affects very materially the smaller builder who is studying the relative merits of electricity and steam or gas for his own purposes.

The Merits of Steam.

In favour of the steam engine we have in the first instance the powerful factor that it had been firmly established for well over a century before the advent of electricity as a practical means of driving machinery as the staple and for a long time the only prime mover, with the exception of water and wind. The user all the world over knows what steam power is and how to apply it, what it involves, and, in a general way, what it will do. He also knows how to keep it in repair.

The limitations which its use imposes on the arrangement of the machines, inconvenient as they may be, are known and accepted by long practice, and factories have always been designed to meet the case by generations of engineers. Then again, steam power is self-contained, *i.e.*, it is not dependent on any outside assistance except for its fuel supply, which can be brought to it, and, as explained, when used for driving wood-working plant, is partially or entirely supplied with fuel automatically on the spot in the form of wood refuse from the machines. The steam boiler, too, is omnivorous in its tastes. It can be constructed to consume coal, coke, peat, straw, wood, oil, or any other combustible material that may be to hand, and, by automatically disposing of the wood refuse, it obviates that trouble and expense in getting rid of it which is incurred with other forms of power.

The unique quality of the steam engine, however, is its elasticity, already referred to. This permits of its being forced by overloading to a far greater extent than any other power. This is a valuable feature where wood-working machines are concerned, because of the great and sudden changes in the load which are characteristic of the sawmill. This virtue of elasticity, however, cuts both ways, and may become a vice, as it often encourages thoughtless and haphazard users to overtax their engines by running constantly with an overload. This is neither scientific nor sound practice, as will be shown later, but we cannot get away from the fact that the builder in times of rush has often found the elasticity of the steam engine a very great convenience.

Summarised briefly, we may put this point as follows:—With an electrical drive you *must* put a sufficiency of power behind your machines or you cannot get them to work at all. With steam power you may knock along inefficiently with considerably less power than you ought properly to provide.

The Individual Drive.

Leaving the question of steam for the moment, we have, if we decide to adopt an electrical drive, two methods to choose from, viz., the "individual" and the "group" drives. The former is theoretically the ideal method, for, if carried out to its logical extreme, each spindle of every machine would have coupled to it its own independent motor, and thereby all shafting and other transmissions would be abolished. Further, it permits you to arrange your machines in your factory in any positions which may suit you with no more restriction than in arranging the furniture in a room. Another advantage in this drive is that when a machine is stopped, all power connected with it stops automatically too, as there are no shafting and belting to go on revolving and absorbing power to no purpose until it is time to start the machine again. Every ounce of power, too, which is given off by the motor is devoted to the spindle it is driving and to nothing else.

There are, however, two flies in the ointment in connection with the individual drive. The first is, that it is essential that each spindle must have a motor which is capable of driving it when working at its full capacity. With some builders' tools, particularly the saws, the difference between average requirements and full capacity may be very great. For instance, an ordinary circular saw of 36 in. diameter may well require 20 h.p. when cutting hard wood to its full depth at its highest speed, while during nine-tenths of the time it may be employed on flatting shallow stuff requiring perhaps 3 or 4 h.p.

The other weak point about the individual drive is that the speeds of the spindles of some builders' machines do not lend themselves to direct coupling to a motor. Thus the crank shaft of a log frame runs too slow and the planing spindle too fast for the generality of currents and motors for driving that are available in this country. When it is found impossible to synchronise the speeds of spindles with those of the motors, the difficulty is overcome by driving the spindle from a motor-driven countershaft by means of a belt, or else by reduction or accelerating gearing, as the case may be. Both these methods, however, absorb a considerable amount of the power before it is transmitted to the machine. In such a case we still have the individual drive, but it is not a direct drive, and its efficiency is not greater than that of the group drive. Thus, as a rule, all the spindles of a four-side planing machine are driven by the one countershaft to which a single motor is coupled.

There is a growing tendency, however, with panel and other planers which have only one spindle, to use a direct coupled motor. This is

done by reducing the speed of the planing spindle so that it will synchronise with that of the motor. Roughly speaking, the normal speeds of planing machines range from 3,000 to 4,000 revolutions per minute. These speeds are higher than are desirable for a direct current motor, because when driven beyond a certain speed there is apt to be trouble with it on account of centrifugal influence and balancing difficulties. On the other hand, in the case of an alternating current, the speed of the motor depends on the nature of the current, and it is seldom found with the currents that are usually available that the motors can be conveniently speeded to more than between 2,000 and 2,700 revolutions. If, therefore, we desire a direct drive on a planing machine we must reduce the speed of the planing spindle to that extent. Then, by using three or four cutters instead of two on the block, a very fair rate of feed may be obtained with an excellent quality of work, as a spindle running at 2,000 revs. with four cutters will produce work of an equal quality at the same rate of feed as a spindle running at 4,000 revs. with only two cutters. In fact, the work of the former should actually be better as the lower speed lessens the vibration and the spindle runs more steadily.

Another method of overcoming the difficulty is to speed up the motor by using a transformer, which will so modify the nature of the current as to permit of the motor attaining the higher speed. This last, however, introduces an element which, as a rule, it is well to avoid, at all events in factories which are dependent on outside help if anything goes wrong with the electrical portion of the plant. With a steam plant, if any hitch occurs, the small user knows what to do and how to do it. When he puts down an electrical drive, however, he generally considers that he has fulfilled his part of the bargain when he has paid for the motor and the current. He wishes to confine himself merely to "pushing the button and seeing the wheels go round" as far as his motive power is concerned. It is the simplicity of the electrical drive which has appealed to him.

OBITUARY.

Mr. W. H. Turner, J.P., of "Min-yr-Avon," Taff-embankment, Cardiff, a director of Messrs. E. Turner & Sons, building contractors, Cardiff, died recently after a brief illness. Mr. Turner was probably best known as one of the partners in the firm of contractors who erected the Cardiff City Hall and many other local buildings. Included amongst these were the Law Courts, the University College, the County Hall, the General Post Office, the Central Library, the Capitol Cinema, the Empire, the Medical College, and numerous churches and chapels.

The death took place recently of Mr. John Hall, of Wolverhampton, a well-known builder and contractor, at the age of 71 years.

Mr. Charles Llewelyn, a very prominent North Wales builder and contractor, passed away recently at the age of 39 years.

Alderman Arthur H. Constance, builders' merchant, of Worcester, passed away recently at Thorneloe, at the age of 53 years.

Messrs. Lewis's, Ltd., New Premises.

In our issue for Jan. 11 our correspondent inadvertently gave the wrong general contractors for this work. The general contractors for the work shown in our illustration are, of course, the well-known Liverpool firm of contractors, Messrs. E. Burns & Sons.

National Federation of Building Trades Employers.

In consequence of the railway strike it has been decided to postpone the annual dinner of the Federation from January 29 until February 19, at the Hotel Victoria, at 7.15 p.m."

The tender of Mr. P. Rourke, of Lutterworth, for the Church Langton Educational Institute, Leicester, should read £4,790, and not £4,970.

RATES OF WAGES IN THE BUILDING TRADE.

The following are the rates of wages in the building trade in England and Wales. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur :—

	Masons.	Bricklayers.	C'p'ters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7	1/7½	1/2½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bath	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bedford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Brentwood	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bridgwater	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Brighton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cambridge	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dudley	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
E. Glam.(Mon. Vall.)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Exeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Folkestone	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Gloucester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Grays	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Great Yarmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hereford	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/0½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ipswich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Lancaster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leamington Spa	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Luton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Maidstone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/0½
Norwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Plymouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Portsmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Reading	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Rugby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Scarborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stroud	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Taunton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Windsor	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
York	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½

(For rates of wages in the Building Trade in Scotland, see page 202).

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

✱FEBRUARY 1.—**Romford, Essex.**—NURSES' HOME, &C.—Erection of nurses' home, erection of new wards, 2 blocks, erection of extension to laundry, erection of Medical Officer's residence, to be carried out at the Romford Union, for the Guardians. Messrs. Harrington & Evans, Guardians' Architects, 45, Bedford-row, London, W.C. 1. Deposit £5 5s.

FEBRUARY 2.—**Glyn Neath (Glam).**—HOUSES.—For erection at Maesmarchog Site, Glyn Neath, for the Neath R.D.C., 16 type "B," parlour, houses, in semi-detached blocks of two, in brickwork. Lump sum tender, for labour and materials complete, required. Mr. D. M. Davies, Architect, Council Offices, Orchard-street, Neath. Deposit £2 2s.

FEBRUARY 4.—**Aberkenfig (Glam).**—ERECTION OF HOUSES, &C.—For carrying out the following works for the Aberkenfig Building Club: Contract 1, Erecting 30 houses, parlour type, in pairs, complete with boundary walls and drains. Contract 2, Short extension of road, with surface water drainage, &c., planting of trees. Mr. Frank H. Heaven, architect, 39, Coronation-street, Aberkenfig. Deposit, Contract 1, £3 3s.; Contract 2, £2 2s.

FEBRUARY 4.—**Aldershot.**—REPAIRS.—For repair work at 78, Ash-road, for the T.C. Borough Sanitary Inspector, Municipal Buildings, Aldershot.

FEBRUARY 4.—**Barnsley.**—HOUSES.—For the erection of 10 houses, Blenheim-road, Barnsley. Mr. W. J. Deighton, "Park View," Park-road, Barnsley.

FEBRUARY 4.—**Bradford.**—HOUSES.—Erection of 10 houses on Swain House Estate, for the T.C. City Architect, Town Hall, Bradford.

FEBRUARY 4.—**Brentford.**—COTTAGE AND COACH-HOUSE.—Erection of a caretaker's cottage and coach-house at the Isolation Hospital, Clayponds-lane, Brentford, for the Brentford Urban District Council. Mr. W. J. W. Westlake, F.S.I., Engineer and Surveyor to the Council, Clifden House, Brentford.

FEBRUARY 4.—**Bristol.**—EXTENSION.—For extending and altering the offices at Queen-square, Bristol, of the Docks Committee. Messrs. W. S. Skinner & Sons, architects, 27, Orchard-street, Bristol. Deposit £3 3s.

FEBRUARY 4.—**Chippenham.**—HOUSES.—For the erection of 20 houses, for the T.C. Mr. A. E. Adams, Borough Surveyor, Chippenham. Deposit £1 1s.

FEBRUARY 4.—**Greenock.**—HOUSES.—Erection of 150 houses of different types, for the T.C. Office of Public Works, Municipal Buildings, Greenock. Deposit £1 1s.

FEBRUARY 4.—**Halifax.**—HOUSES.—Erection of 30 houses on Quarry House Estate, for T.C. Borough Engineer, Crossley-street, Halifax. Deposit £2 2s.

FEBRUARY 4.—**Huddersfield.**—HOUSE, &C.—Alterations to premises; also new caretaker's house, for the Lockwood Conservative Club. Mr. Joe Ainley, architect, 3, Chapel Hill, Huddersfield.

FEBRUARY 4.—**Morecambe.**—BUILDING.—Erection of building of oil gas plant, &c., gas works, for the T.C. Mr. P. Holt, Borough Engineer, Morecambe. Deposit £1 1s.

FEBRUARY 4.—**Rotherham.**—HOUSES.—Erection of 100 houses and roads and drains thereto, at Thurcroft, for Rothervale Collieries Branch of the United Steel Co.'s, Ltd. Mr. J. E. Knight, architect, Regent House, 48, Moorgate, Rotherham. Deposit £2 2s.

FEBRUARY 4.—**Scarborough.**—HOUSES.—(*a*) Erection of 50 houses on the Edgehill Park Estate; (*b*) one block of eight houses, Potter-lane, Scarborough; (*c*) one block of nine flats, Longwestgate, Scarborough, for the Council of the Borough of Scarborough. Mr. Harry W. Smith, A.M.I.C.E., Borough Engineer and Surveyor, Town Hall, Scarborough. Deposit £1 1s.

FEBRUARY 4.—**Stirling.**—HOUSES.—Erection of the following houses:—Brightons, Polmont, 42 houses; Redding (Cross-roads), 12 houses; Glen Village, eight houses, for the Eastern District Committee of the Stirling C.C. Mr. T. M. Copland, architect, 76, High-street, Falkirk, for the Brightons scheme, and Messrs. A. & W. Black, architects, 76, High-street, Falkirk, for the Redding (Crossroads) and Glen Village schemes. Deposit £1 1s.

FEBRUARY 4.—**Sunbury-on-Thames.**—HOUSES.—Erection of 20 houses in or near Manor-lane, Sunbury, for the Sunbury-on-Thames U.D.C. Mr. Harold F. Coales, A.M.I.C.E., Council Offices, Green-street, Sunbury.

FEBRUARY 4.—**Wallsend.**—HOUSES.—Erection of sample houses at High Farm Housing Estate, viz.: One block semi-detached parlour type houses, two blocks of semi-detached bungalows, for the T.C. Borough Surveyor, Town Hall, Wallsend. Deposit £2 2s.

FEBRUARY 5.—**Bradford.**—CONVENIENCES.—For remodelling conveniences at the Market Tavern, Godwin-street, for Markets and Fairs Committee. City Architect, Town Hall, Bradford.

FEBRUARY 5.—**Builth Wells.**—FOUNDATION.—For laying the foundations for new war memorial at Gro Green, Builth Wells. Cement concrete foundation with dressed Llanelwydd stone steps. Mr. Telfer Smith, architect, Market Hall, Builth Wells. Deposit 10s.

FEBRUARY 5.—**Cardiff.**—HOUSES.—For the erection (in lots) of 250 houses at Ely, for the T.C. Architect, City Hall, Cardiff. Deposit £2 2s.

FEBRUARY 5.—**Limerick.**—RACE-COURSE STAND, &C.—For erecting (1) reinforced concrete stand, and (2) 50 stables, for the Limerick Race Co. Mr. J. O'Malley, Glentworth-street, Limerick.

FEBRUARY 5.—**Sheffield.**—SUB-STATIONS.—(*a*) Erection of transformer sub-station in Upperthorpe; (*b*) alterations and additions to transformer sub-station in Newhall-road, for the T.C. Mr. S. E. Fedden, General Manager, Commercial-street, Sheffield. Deposit £1 1s. each contract.

FEBRUARY 5.—**Teignmouth.**—CONVENIENCES.—Erection of public conveniences in The Triangle, for the U.D.C. Mr. F. W. Knight, Surveyor, Town Hall, Teignmouth.

FEBRUARY 5.—**Ventnor.**—CONVENIENCES.—For altering existing premises and constructing new conveniences at Marlborough-road, for the U.D.C. Mr. D. V. Howard, Surveyor, Town Hall, Ventnor.

FEBRUARY 5.—**Widnes.**—POST OFFICE.—Erection of a new post office at Widnes, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M.O.W., King Charles-street, London, S.W.1. Deposit £1 1s. (payable to the Secretary).

FEBRUARY 5.—**Wombwell.**—FLOORS.—For erection of moveable floors over the swimming ponds at the Public Baths, Hough-lane, for U.D.C. Surveyor, Town Hall, Wombwell. Deposit £1 1s.

FEBRUARY 6.—**Ashton-under-Lyne.**—HOUSES.—Erection and completion of 58 houses (34 Class "A" and 24 Class "B") in pairs, to be erected on the Heys Estate, Montague-road, Ashton-under-Lyne, for the Housing Committee of the Borough of Ashton-under-Lyne. Messrs. W. H. George & Son, architects, 7, Warrington-street, Ashton-under-Lyne. Deposit £1 1s.

FEBRUARY 6.—**Dover Tower Hamlets Site.**—LEVELLING.—For certain works of levelling for the Kent Education Committee. Mr. W. H. Robinson, F.S.Arc., Sessions House, Maidstone.

FEBRUARY 6.—**Hawick.**—HOUSES.—Erection of three blocks of four two-roomed houses at Mansfield-road, for the T.C. Messrs. J. P. Alison & Hobkirk, architects, 45, Bridge-street, Hawick.

FEBRUARY 6.—**Leadgate.**—SCHOOLS.—Erection of R.C. Schools, Leadgate. Mr. Frank A. Coyle, architect, 29, Newmarket-street, Consett. Deposit £2 2s.

FEBRUARY 6.—**Newcastle-on-Tyne.**—GATES.—For providing and fixing 20 garden gates to allotments in the Stubbsfield. Mr. George Hollins, architect, Lloyds Bank Chambers, Newcastle.

FEBRUARY 6.—**Sheffield.**—HOUSES.—Erection of 47 houses on the Wincobank Hall site and 54 houses on the Woodhouse Estate, for T.C. Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield. Deposit £2.

FEBRUARY 7.—**Acton.**—PAINTING, &C.—For (1) painting and decorations, East Acton Housing Estate; (2) painting railings, &c., N. Acton public playing fields; (3) provision and fixing of iron fence, Crown-street, and the Woodlands, for the B.C. Borough Surveyor, Municipal Offices, Acton, W.3.

✱FEBRUARY 7.—**Chiswick, W.4.**—WORK AND STORES.—The execution of work and supply of stores (separately) for twelve months, commencing April 1, 1924, for the U.D.C. of Chiswick. Mr. Edward Willis, M.I.C.E., Engineer and Surveyor, Town Hall, Chiswick, W. 4 (stamped addressed foolscap envelope enclosed).

FEBRUARY 7.—**Douglas.**—LYCH-GATE.—For erection of a lych-gate in St. George's Churchyard. Mr. F.C.H. Cowin, Kenwood, Brunswick-road, Douglas, I.O.M.

FEBRUARY 7.—**Erdington Hall.**—BRIDGE—Rebuilding of Erdington Hall Bridge over the Birmingham and Fazeley Canal, for the Birmingham Tame and Rea District Drainage Board. Mr. A. E. Harris, Clerk, 117, Colmore-row, Birmingham.

FEBRUARY 7.—**Gateshead.**—HOUSES.—Erection of 100 houses of various types and designs on the Carr-hill Building Estate, for the T.C. Borough Engineer, Town Hall, Gateshead. Deposit £5.

FEBRUARY 8.—**Carlisle.**—ALTERATIONS.—For alterations and extensions to Maternity Hospital, George-street, for Health Committee. Mr. H. C. Marks, City Engineer, 18, Fisher-street, Carlisle. Deposit £1 1s.

FEBRUARY 8.—**Carlisle.**—TRANSFORMER STATIONS.—Erection of transformer stations, at Stanwix, Fuse Hill-street, and Tarraby, for Electricity Committee. Mr. H. C. Marks, City Engineer, 18, Fisher-street, Carlisle. Deposit £1 1s.

FEBRUARY 8.—**Doncaster.**—HOUSES.—Erection of 46 houses of various types on Norton Housing Estate, for the R.D.C. Mr. T. R. Johnson, architect, 20, Priory-place, Doncaster. Deposit £2 2s.

FEBRUARY 8.—**Tiverton.**—POWER HOUSE.—For building a power-house in connection with the installation of an electric supply, for the T.C. Mr. T. E. Corrigan, Gas Office, Blundell's-road, Tiverton. Deposit £2 2s.

FEBRUARY 8.—**Warrington.**—PAINTING, &C.—For painting and decorating the Gardener's Lodge, at the Cemetery, for T.C. Borough Surveyor, Town Hall, Warrington.

FEBRUARY 9.—**Ashford.**—SHEDDING, &C.—For erecting shedding, offices, stands, and other works for the Agricultural Show to be held at Ashford on July 10, 11 and 12, for the Kent County Agricultural Society. Major R. J. Bacon, secretary, Otham, Maidstone.

FEBRUARY 9.—**Blackpool.**—DEMOLITION.—For demolition and removal of Hoo Hill Villa, Bispham-road, for T. C. Mr. F. Wood, Borough Surveyor, Municipal Offices, Blackpool.

FEBRUARY 9.—**Dewsbury.**—HOUSES.—Erection of 56 houses, for the T.C. Borough Surveyor, Town Hall, Dewsbury. Deposit £1 1s.

FEBRUARY 9.—**Formby.**—HOUSES.—Erection of 26 houses, for the U.D.C. Mr. Ernest H. Bond, Clerk, Council Offices, Formby. Deposit £1 1s.

FEBRUARY 9.—**Onllwyn, near Neath.**—HOUSES.—Erection of 50 parlour type houses of two classes at Maesmarchog, Onllwyn, near Neath, with necessary roads and sewers in connection therewith, for Messrs. Evans & Bevan, colliery proprietors, Neath. Mr. J. Cook Rees, F.S., architect, Parade Chambers, Neath.

FEBRUARY 9.—**Radcliffe.**—HOUSES.—Erection of 56 workmen's dwellings, near St. Andrew's Church, for U.D.C. Mr. W. L. Rothwell, Surveyor, Council Offices, Radcliffe. Deposit £2 2s.

✱FEBRUARY 9.—**Sutton, Surrey.**—BANDSTAND.—Supply and erection of a bandstand in the Manor Park, Sutton, for the Sutton (Surrey) U.D.C. Surveyor to the Council, Municipal Offices, Sutton. Deposit £1 1s.

FEBRUARY 11.—**Bishop's Stortford.**—SWIMMING BATH.—Construction of open-air swimming bath in reinforced concrete, for the U.D.C. Mr. Robert S. Scott, Surveyor, Council Offices, Bishop's Stortford. Deposit £2 2s.

FEBRUARY 11.—**Dunstable.**—OFFICES, &C.—For erection of additional offices, &c., at the Town Hall, for T.C. Mr. W. F. Wilkins, Borough Surveyor, Town Hall, Dunstable.

FEBRUARY 11.—**Durham.**—ADDITIONS.—For alterations and extensions to board room at the Poor Law Institution, for the Board of Guardians. Messrs. W. & T. R. Milburn, FF.R.I.B.A., 19, Fawcett-street, Sunderland.

FEBRUARY 11.—**Durham.**—FIRE ESCAPE STAIRCASES.—Fire escape staircases at the Poor Law Institution, for the Board of Guardians. Messrs. W. & T. R. Milburn, FF.R.I.B.A., 19, Fawcett-street, Sunderland.

FEBRUARY 11.—**Ixworth.**—BRIDGE.—For the reconstruction of Potter's Bridge, Ixworth, in reinforced concrete, for the West Suffolk C.C. Mr. E. H. Bond, County Surveyor, Shire Hall, Bury St. Edmunds.

FEBRUARY 11.—**Kingston-upon-Thames.**—HOUSES.—Erection of 10 pairs of houses on the Housing Estate, for the Corporation of the Borough of Kingston-upon-Thames. Borough Surveyor, Town Hall, Kingston-upon-Thames. Deposit £1 1s.

FEBRUARY 11.—**London, S.W.19.**—HOUSES.—Erection of 5-roomed houses, 12, 24, or 87 in number, on the Council's Housing Estate, Toynbee-road, Burstow-road, and Dennis Park-crescent, within the Borough, for the Corporation of Wimbledon. Borough Engineer and Surveyor, Town Hall, Wimbledon. Deposit £2 2s.

FEBRUARY 11.—**Mitcham.**—PUBLIC CONVENIENCES.—Erection of public conveniences on the Upper or Fair Green, Mitcham, for the U.D.C. The Surveyor, Broadway House, Mitcham. Deposit 10s. 6d.

FEBRUARY 11.—**Newcastle-on-Tyne.**—EXTENSION.—Erection of a bathroom and scullery at the entrance lodge, banqueting hall, Jesmond Dene, for the T.C. City Engineer, Town Hall, Newcastle-upon-Tyne.

FEBRUARY 11.—**Walsall.**—HOUSES.—Erection of 71 houses of various types, for the T.C. Mr. J. Taylor, Borough Surveyor, Council House, Walsall. Deposit £1.

FEBRUARY 11.—**Paisley.**—OFFICES.—Erection of new administrative offices, for the Renfrewshire Education Authority. Mr. J. Hamilton Pullar, Executive Officer, County Education Offices, 28, High-street, Paisley. Deposit 10s.

FEBRUARY 11.—**Windsor.**—BOILER HOUSE, FIRE-BRICK LINED CHIMNEY, &C.—Construction of boiler house, foundations and setting of Cornish boiler, fire-brick lined chimney, and sundry builders' work in attendance on Engineers, for the Guardians of the Windsor Union. Mr. Walter W. Nobbs, M.I.Mech.E. (the Consulting Engineer in charge of the works), of 50, Fairhazel-gardens, N.W. 6.

FEBRUARY 12.—**Edmonton.**—PAINTING.—For painting works on various buildings of the Council, also the work of flooring over swimming bath, for U.D.C. Mr. C. Brown, Engineer of the Council, Town Hall, Edmonton.

✱FEBRUARY 12.—**Erith.**—SCHOOL.—For the re-instatement and erection of additions at Crescent-road, for the U.D.C. Mr. Harold Hind, Architect, Council Offices, Erith. Deposit £1.

FEBRUARY 12.—**Filey.**—SHELTER AND WALL.—For construction of a shelter and cafe, Crescent-gardens, and retaining wall and steps, Foreshore-road, for U.D.C. Mr. B. H. Noble, Surveyor, Council Offices, Filey. Deposit £2 2s.

✱FEBRUARY 12.—**Horsham.**—HOUSES.—Erection of eight houses in two blocks of four each in Ifield-road, Crawley, for the Horsham R.D.C. Mr. W. R. Guildford, Surveyor to the Council, Albion-terrace, Horsham. Deposit £1 1s.

FEBRUARY 12.—**Pontardawe (Glam).**—TWENTY HOUSES.—For erecting for U.D.C. twenty houses at Clydach Site, Pontardawe. Mr. E. D. Jones, Architect, Council Offices, Pontardawe. Deposit £3.

FEBRUARY 12.—**Reigate.**—PUBLIC CONVENIENCES.—For various works required in the construction of public conveniences in the Market-square, Reigate, for the T.C. of the Borough of Reigate. Borough Surveyor, Municipal Buildings, Reigate.

FEBRUARY 12.—**Rutland.**—REPAIRS, &C.—For repairs to Essendine School, near Stamford, for the Education Committee. Mr. F. W. Nichols, surveyor, Market-place, Oakham.

FEBRUARY 12.—**Uppingham.**—REPAIRS, &C.—For repairs to Caldecott School, near Uppingham, for the Education Committee. Mr. F. W. Nichols, surveyor, Market-place, Oakham.

FEBRUARY 12.—**Wallingford.**—REPAIRS.—For repairs to Casual Ward buildings, for the Board of Guardians. Mr. F. G. Sainsbury, architect, Reading.

FEBRUARY 13.—**Littlehampton.**—ALTERATIONS.—For alterations and additions to the Town Offices. Surveyor, Town Offices, Littlehampton.

✱FEBRUARY 13.—**Newbury.**—HOUSES.—Alternative tenders for (a) 12 houses, or (b) a pair of houses for the Corporation on a site at Essex-street. The Borough Surveyor's Office, Municipal Buildings, Newbury.

FEBRUARY 13.—**Oakham.**—COTTAGES.—Erection of three bungalow cottages in Station-road. Mr. F. W. Nichols, Market-place, Oakham. Deposit £1 1s.

FEBRUARY 13.—**Pershore.**—BRIDGE.—Construction of a new bridge over the River Avon, to be carried out in ferro-concrete, for the Worcestershire C.C. Mr. C. F. Gettings, County Surveyor, 30, Foregate-street, Worcester. Deposit £5.

FEBRUARY 13.—**Shrewsbury.**—HOUSES.—Erection of 20 houses in Sultan-road, for T.C. Mr. A. W. Ward, Borough Surveyor, Guildhall, Shrewsbury.

FEBRUARY 14.—**Manchester.**—EXTENSIONS.—For extensions to maids' bedrooms at Baguley Sanitorium, for Public Health Committee. City Architect, Town Hall, Manchester. Deposit £1 1s.

FEBRUARY 14.—**Salisbury.**—HOUSES.—Erection of 50 houses on the Wain-a-long Road Housing Site, for the T.C. Mr. W. J. Goodwin, Surveyor, Municipal Offices, Salisbury. Deposit £2 2s.

FEBRUARY 14.—**Sligo.**—CUSTOM HOUSE.—For reconstruction of Sligo Custom House, for Commissioners of Public Works. Mr. J. J. Healy, Secretary, Office of Public Works, Dublin. Deposit £1.

FEBRUARY 15.—**Leyton.**—PLAYSHEDS.—Erection of two playsheds at Cannhall-road School, for U.D.C. Mr. J. H. Jacques, 61, West Ham-lane, Stratford, E. 15. Deposit £1.

FEBRUARY 15.—**Portadown.**—CHAPEL.—Erection of a new chapel adjoining the Convent of the Presentation Order, Portadown. Mr. Albert E. Brooks, quantity surveyor, 17, Chichester-street, Belfast.

✱FEBRUARY 16.—**Bexhill.**—HOUSES.—Erection of 35 houses upon the London-road site, for the Corporation of Bexhill housing scheme. Mr. George Ball, A.M.I.C.E., Borough Engineer and Surveyor, Town Hall, Bexhill. Deposit £1 1s.

FEBRUARY 16.—**Bridlington.**—SHELTERS.—For erection of shelters on the Beaconsfield Sea Wall, for T.C. Borough Surveyor, 1, The Crescent, Bridlington. Deposit £1 1s.

✱FEBRUARY 18.—**Harrow-on-the-Hill.**—HOUSES.—For the erection of 18 parlour type houses on the Honeybun Estate, for the U.D.C. Mr. J. Percy Bennetts, Engineer and Surveyor, Council Offices, Harrow. Deposit £1.

✱FEBRUARY 18.—**Hertfordshire.**—SCHOOL.—Erection and completion of a new County Council school to accommodate 144 scholars at Walkern, near Stevenage, for the Hertfordshire County Council. County Surveyor's Office, Hatfield. Deposit £1 1s.

✱FEBRUARY 18.—**Ilford.**—SCHOOL BUILDINGS.—Erection and completion under one contract of the following buildings at Steven's-road, Becontree, for the Ilford U.D.C.: (*a*) Upper school; (*b*) Middle and lower schools; (*c*) Medical inspection block, with covered ways hereto from each school. Mr. H. Shaw, M.Inst.C.E., Engineer and Surveyor to the Council, Town Hall, Ilford. Deposit £5 5s.

FEBRUARY 18.—**Penparcau (Aberystwyth).**—MEMORIAL HALL.—For erecting, for the Penparcau and District War Memorial Committee, a public memorial hall. Mr. T. Llew. Thomas, Hon. Sec., "Pretoria," Rhydyfelin, Aberstwyth.

FEBRUARY 18.—**Wakefield.**—ALTERATIONS.—For alterations to 4, Bond-street, for West Riding General Purposes Committee. West Riding Architect, County Hall, Wakefield.

✱FEBRUARY 18.—**Welwyn, Herts.**—COTTAGES.—Erection of 100 cottages in the parish of Welwyn Garden City, in the County of Hertford, for the R.D.C. Mr. Louis de Soissons, Architect, Estate Office, Welwyn Garden City, Herts. Deposit £2 2s.

FEBRUARY 19.—**Warrington.**—HOUSES.—Erection of 54 houses on the Reynolds-street site, for T.C. Mr. W. T. Davenport, Queens' Chambers, Sankey-street, Warrington. Deposit £2 2s.

FEBRUARY 20.—**Crook.**—COTTAGES.—Erection of the following houses for the Aged Miners' Homes: Four houses, situated at Hill Top, Stanley, near Crook; two houses, situated at Sunniside, near Crook, Co. Durham. Mr. Thos. J. Shepherd, Secretary, 17, Double-row, Sunniside, Tow Law, Co. Durham.

FEBRUARY 20.—**Stornoway.**—COTTAGES.—Erection of cottages at Stornoway, for the T.C. Messrs. Alexander Ross & Son, architects, Inverness.

✱FEBRUARY 25.—**Worthing.**—SHELTERS.—Erection of four glazed shelters on the Marine-parade, Worthing, for the B.C. Borough Surveyor, Municipal Offices, Worthing. Deposit £1 1s.

FEBRUARY 26.—**London, E.3.**—BUILDING ADDITIONS, &c.—Building of a nurses' dining-room, alterations and additions, and redecorations at St. Andrew's Hospital, Devon's-road, Bow, E.3, for the Managers of the Poplar and Stepney Sick Asylum District, St. Andrew's Hospital. Messrs. Andrews & Peascod, architects, 135, Bow-road, E.3. Deposit £3.

✱FEBRUARY 26.—**London, N.W.6.**—DECORATION, STEAM HEATING AND LIGHTING.—Decoration of certain buildings at the Municipal Hospital, Brentfield-road, Neasden, for the Willesden U.D.C. Mr. F. Wilkinson, M.Inst.C.E., Engineer to the Council, Town Hall, Dyne-road, Kilburn, N.W. 6.

✱FEBRUARY 28.—**Greenwich.**—HOUSES.—Erection and completion of 48 houses in two sections on the Charlton Housing Estate, completion of Site No. 3, under the supervision of the Council's Architect. Town Clerk's Department, Town Hall, Greenwich. Deposit £2 2s.

FEBRUARY 28.—**Wakefield.**—WORKSHOPS.—Supply of 17 sectional wood workshops, for the West Riding C.C. Health Committee. West Riding Architect, County Hall, Wakefield.

NO DATE.—**Burley-in-Wharfedale.**—HOUSE.—Erection of a detached house, including heating and electric lighting. Messrs. A. Marshall & Sons, architects, Otley.

NO DATE.—**Carlton.**—BUNGALOW.—Erection of a bungalow at Carlton, near Wakefield. Mr. W. F. Hirst, surveyor, Rothwell, Leeds.

NO DATE.—**Consett.**—BUNGALOWS.—The Consett Iron Co., Ltd., invite tenders for the erection of 51 bungalows at Crookhall, near Consett.

NO DATE.—**Glossop.**—HOUSES.—Erection of 50 houses at Charlesworth, for the Horgate Building Co. Secretary, 100, King-street, Manchester. Deposit £2 2s.

NO DATE.—**Harrogate.**—CHURCH AND SCHOOL.—Erection of a church and school at Bilton. Mr. W. H. H. Marten, 50, Cookridge-street, Leeds.

NO DATE.—**Hull.**—HOUSES.—The Corporation invite tenders for the erection of 200 houses on the Hessle-road Estate. City Architect's Office.

✱NO DATE.—**Lydney, Gloucester.**—COTTAGES.—Erection of twenty cottages upon the Tutnalls site at Lydney, Glos., in accordance with the plans and specification prepared by the architect. Mr. John Harold Kennard, F.R.I.B.A., 12, Gray's Inn-square, London, W.C.1; Mr. Harold W. Berthon, Clerk to the Council, Lydney, Glos.

NO DATE.—**Newport.**—WAREHOUSES.—For completing warehouses and other works at Newport. Mr. J. H. Davies, architect, Pontypridd. Deposit £1 1s.

NO DATE.—**Pennard (Glam).**—COTTAGE.—For erection of a cottage at Pennard. Mr. Glendinning Moxham, architect, 18, Castle-street, Swansea.

NO DATE.—**Plymouth.**—The Council are prepared to receive tenders for the erection of 120 houses (the whole or a portion of the number) on four sites at North Prospect (Section No. 2). Mr. J. Wibberley, Borough Engineer and Surveyor, Municipal Offices, Plymouth. Deposit £2 2s.

NO DATE.—**Shrewsbury.**—HOUSES.—Erection of 30 houses on Coton-hill Housing Estate, for T.C. Mr. A. W. Ward, Borough Surveyor, Guildhall, Shrewsbury.

✱NO DATE.—**Sutton, Surrey.**—ALTERATIONS.—For alterations and additions to 8, Manor-parade, High-street, for Messrs. Timothy White Co., Ltd. (Construction Dept.), 30, Chandos-street, Portsmouth.

NO DATE.—**Wallsend.**—HOUSES.—The T.C. is desirous of receiving tenders for erection of the following sample houses at their High Farm Housing Estate: One block semi-detached parlour type houses and two blocks of semi-detached bungalows.

FURNITURE, MATERIALS, etc.

FEBRUARY 3.—**Rishworth.**—MATERIALS.—Supply of road stone and tar to the U.D.C. Mr. Joseph Walshaw, Clerk, Halifax.

FEBRUARY 4.—**Hendon.**—MATERIALS.—Supply of road materials, iron castings, &c., to the U.D.C. Mr. A. O. Knight, Surveyor, Town Hall, Hendon.

FEBRUARY 4.—**Kettering.**—STORES, &C.—For supply of road and other materials, for one year, for the U.D.C. Mr. T. R. Smith, surveyor, Market-place, Kettering.

FEBRUARY 4.—**Little Hulton.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. James H. Heyes, Clerk, Council Offices, Little Hulton, near Bolton.

FEBRUARY 4.—**Renfrew.**—ROAD MATERIALS.—Supplying with metal sections of roads in the First or Upper District of the County of Renfrew for one year, also for borders, setts, and chips, for the Renfrew C.C. Mr. Robert Drummond, Road Surveyor, 18, Forbes-place, Paisley.

FEBRUARY 4.—**Sunbury-on-Thames.**—TAR.—Supply of 12,000 gallons of refined coal tar to the U.D.C. Mr. Harold F. Coales, Surveyor, Council Offices, Sunbury-on-Thames.

FEBRUARY 4.—**Swindon.**—MATERIALS.—Supply of materials for one year to the T.C. Mr. S. C. Baggott, Borough Surveyor, 34, Regent-circus, Swindon.

FEBRUARY 4.—**Warrington.**—MATERIALS.—For supply of materials to the Paving and Sewerage Committee for one year, for T.C. Mr. A. M. Kerr, Borough Surveyor, Town Hall, Warrington.

FEBRUARY 5.—**Cheshunt.**—ROAD MATERIALS, &C.—For supply of road and other materials, for one year, for U.D.C. Mr. J. E. Sharpe, Surveyor, Manor House, Cheshunt, Herts.

FEBRUARY 5.—**Chingford.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. L. C. Bowen, Clerk, 34, Station-road, Chingford.

FEBRUARY 5.—**London, N.W.3.**—MATERIALS OR SERVICES.—Tenders for various works, materials or services, for one year, from April 1 next, for the Hampstead B.C. Mr. Arthur P. Johnson, Town Clerk, Town Hall, Haverstock-hill, N.W.3.

FEBRUARY 5.—**New Malden.**—MATERIALS.—For supply of road and other materials, for one year, for the U.D.C. Surveyor, Council Offices, New Malden.

FEBRUARY 5.—**Whitchurch.**—GRANITE.—Supply of 2½-in. granite to the R.D.C. Mr. W. J. Hiscox, Surveyor, Winchester-street, Whitchurch, Hants.

FEBRUARY 6.—**Bury St. Edmunds.**—MATERIALS.—Supply of road and other materials to the West Suffolk C.C. Mr. E. H. Bond, County Surveyor, Shire Hall, Bury St. Edmunds.

FEBRUARY 6.—**Buxton.**—MATERIALS.—For supply of road and other materials for nine months, for T.C. Mr. F. Langley, Borough Engineer, Town Hall, Buxton.

FEBRUARY 7.—**Alton.**—MATERIALS.—Supply of broken granite and limestone to the R.D.C. Mr. A. O. Crew, Rodney House, Alton.

FEBRUARY 7.—**Kensington.**—MATERIALS.—For supply of various materials for the public services of the B.C. Mr. H. Rapson, Town Clerk, Kensington, W.

FEBRUARY 7.—**Stockport.**—MATERIALS.—For supply of road and other material, for one year, for Highways and Sewers Committee of T.C. Mr. H. Hamer, Borough Surveyor, Town Hall, Stockport.

FEBRUARY 7.—**Wisbech.**—ROAD MATERIALS.—Supply of broken granite, slag and tar macadam to the Isle of Ely C.C. Mr. H. Farr Simpson, County Surveyor, Wisbech.

FEBRUARY 7.—**Wood Green.**—MATERIALS.—Supply of broken granite, flints, hoggin and sand, stoneware pipes, Portland cement, masons' and paviors' works, asphalt works for footways, tar-paving works, &c., for the U.D.C. Surveyor, Town Hall, Wood Green. Deposit £1 1s. each form.

FEBRUARY 8.—**Belfast.**—MATERIALS.—Supply of stores to the London, Midland and Scottish Railway Co. Northern Counties Committee (Ireland). Mr. F. J. Martin, Stores Superintendent, York-road Station, Belfast.

FEBRUARY 8.—**Gillingham.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. J. L. Redfern, Borough Engineer, Gillingham, Kent.

FEBRUARY 9.—**Darlington.**—MATERIALS.—Supply of goods and materials to the R.D.C. Surveyor, Union Offices, Darlington.

FEBRUARY 9.—**Newark.**—MATERIAL.—For supply of macadam, granite and slag to R.D.C. Mr. R. Oakden, Surveyor, 29, Winchelsea-avenue, Newark.

FEBRUARY 9.—**Newmarket.**—MATERIALS.—Supply of granite and chippings to the U.D.C. Mr. W. H. Eley, Surveyor, Newmarket.

FEBRUARY 9.—**Thirsk.**—MATERIALS.—Supply of road materials, pipes, tools, &c., to the R.D.C. Mr. J. W. Lupton, Surveyor, Thirsk.

FEBRUARY 9.—**Trowbridge.**—MATERIALS.—Supply of 350 tons ¼ or ½ in. granite or limestone chippings to the U.D.C. Mr. Geo. W. J. Clark, Surveyor, Tow Hall, Trowbridge.

FEBRUARY 10.—**Port Talbot.**—MATERIALS.—Supply of ironmongery, castings, limestone, tarmac, &c., to T.C. Borough Engineer, Port Talbot.

FEBRUARY 11.—**Eccles.**—DUST CARTS.—For two carts for use in the Scavenging Department. Mr. C. W. Laskey, Public Health Offices, Eccles.

FEBRUARY 11.—**Hull.**—MATERIALS.—For stores for the Tramways Department. Mr. E. S. Rayner, Tramways Engineer, Hull.

FEBRUARY 11.—**Mitcham.**—MATERIALS.—For road and other materials, for one year, for the U.D.C. Surveyor, Broadway House, Lower Mitcham.

FEBRUARY 12.—**Deptford.**—MATERIALS.—For supply of road and other materials, for one year, for B.C. Mr. A. Purkis, Town Clerk, Town Hall, New Cross-road, S.E. 14.

FEBRUARY 12.—**Tadcaster.**—MATERIALS.—For road material, stores, &c., for the R.D.C. Mr. Geo. A. Bromet, Clerk, Kirkgate, Tadcaster.

FEBRUARY 13.—**Belfast.**—MATERIALS.—Supply to the Belfast and County Down Railway Co. of stores. Mr. H. E. Mellor, Secretary, Queen's Quay Terminus, Belfast.

FEBRUARY 13.—**London, E.C.1.**—STORES, &C.—Supply of the undermentioned stores, &c., for the periods of six or twelve months, commencing April 1, 1924, as the Metropolitan Water Board may decide. Chief Engineer, Metropolitan Water Board, New River Head, 173, Rosebery-avenue, E.C.1, by personal application (Room 155) or upon forwarding a stamped addressed brief envelope.

FEBRUARY 13.—**Louth.**—MATERIALS.—Supply of granite and slag to the R.D.C. Mr. F. J. M. Ingoldby, Clerk, Council House, Louth.

FEBRUARY 13.—**Middlesex.**—ROAD MATERIALS.—Supply of granite, tarred slag and granite chippings to the Middlesex C.C. Mr. A. Dryland, County Engineer, Middlesex Guildhall, Westminster, S.W.1.

FEBRUARY 14.—**Liverpool.**—MATERIALS.—Supply of glass for street lamps, lamp standards, &c., to the T.C. City Lighting Engineer, 15, Highfield-street, Liverpool.

FEBRUARY 14.—**London, S.W.**—VARIOUS MATERIALS.—Supply of various materials and services for various periods, for the Lambeth B.C. Mr. Osmond Cattlin, Assoc.M.Inst.C.E. (chartered civil engineer), Borough Engineer, Town Hall, Brixton-hill, S.W.2.

FEBRUARY 14.—**Wallington.**—MATERIALS.—For supply of road and other materials, for one year, for U.D.C. Mr. S. F. R. Carter, Surveyor, Council Offices, Wallington, Surrey.

FEBRUARY 16.—**Bedford.**—MATERIALS.—For supply of road materials and for cartage of road materials, for C.C. County Surveyor, Shire Hall, Bedford.

FEBRUARY 16.—**Stafford.**—MATERIALS.—Supply of stores and materials to the T.C. Mr. W. Plant, Borough Engineer, Borough Hall, Stafford.

FEBRUARY 18.—**Long Sutton.**—ROAD MATERIALS.—For supply of road material to the U.D.C. Surveyor, Long Sutton, Lincs.

FEBRUARY 18.—**Southport.**—MATERIALS.—Supply of various materials to the T.C. Mr. A. E. Jackson, Borough Engineer, Town Hall, Southport.

FEBRUARY 20.—**Hammersmith.**—MATERIALS.—Supply of stores and materials for the various departments of the B.C. Borough Engineer, Town Hall, Hammersmith, W.

FEBRUARY 21.—**Frome.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. L. Slaughter, Public Offices, Frome.

FEBRUARY 21.—**Greenwich.**—MATERIALS.—For supply of road and other material, for one year, for B.C. Borough Engineer, Town Hall, Greenwich-road, S.E. 10.

FEBRUARY 25.—**St. Marylebone.**—MATERIALS.—Supply of tools and ironmongery, &c., to Highway Dept. of B.C. Mr. J. Gair, Engineer, Town Hall, Marylebone-road, N.W.

FEBRUARY 29.—**Canterbury.**—MATERIALS.—Supply of road and other materials to the T.C. Mr. P. H. Warwick, City Surveyor, Canterbury.

FEBRUARY 29.—**Ossett.**—MATERIALS.—For supply of materials, stores, workmen's tools, &c., for one year, for T.C. Borough Surveyor, Town Hall, Ossett.

FEBRUARY 29.—**Upholland.**—MATERIALS.—For road and other materials, for one year, for U.D.C. Mr. A. Hunt, Clerk, Upholland, Lancs.

✱NO DATE.—**Chartham, near Chatham.**—KITCHEN EQUIPMENT.—Supply of kitchen equipment, for the Committee of the Kent County Mental Hospital, Chartham, near Canterbury. Clerk and steward, as above.

ENGINEERING, IRON AND STEEL.

FEBRUARY 4.—**Cardonald, &c.**—BRIDGE STRENGTHENING.—For strengthening of overbridges at Cardonald and footbridge at Hamilton, for the London, Midland and Scottish Railway Co. (Northern Division). Divisional Engineer, Buchanan-street Station, Glasgow. Deposit £2 2s.

✱FEBRUARY 4.—**Douglas.**—HEATING AND LIGHTING.—For either the scheme for heating or the scheme for lighting the Secondary School for Boys now in the course of erection. Mr. T. R. Lewin, Clerk of the Isle of Man Education Authority, Regent-street, Douglas, Isle of Man. Deposit £1 1s.

FEBRUARY 4.—**Dublin.**—STEELWORK.—Supply to the Midland Great Western Railway of Ireland of steelwork for canal footbridge, Maynooth. Chief Engineer, Broadstone Terminus, Dublin. Charge 4s.

★FEBRUARY 4.—**Epsom, Surrey.**—WROUGHT IRON FENCING.—Supply, delivery and fixing at West Park Mental Hospital, Epsom, Surrey, of about 1,750 yards lineal, more or less, of unclimbable wrought iron fencing 6 ft. high above ground and 20 gates, for the London County Council. Mental Hospitals Engineer, Room 669, The County Hall, Westminster Bridge, S.E.1.

FEBRUARY 4. — **Holytown.** — FOOTBRIDGE. — Providing and erecting of the footbridge required at the level crossing at Holytown Junction, for the London, Midland and Scottish Railway Co. (Northern Division). Divisional Engineer, Buchanan-street Station, Glasgow. Deposit £2 2s.

FEBRUARY 4.—**Manchester.**—CRANE.—For one locomotive jib crane and grab. Mr. S. L. Pearce, Electrical Engineer, Dickinson-street, Manchester. Deposit £1 1s.

FEBRUARY 4.—**Salford.**—COOKING EQUIPMENT.—For a complete cooking and kitchen equipment at Ladywell Sanatorium, for the T.C. Medical Officer of Health, 143, Regent-road, Salford.

FEBRUARY 4.—**Stoke-on-Trent.**—ELECTRIC LIGHT.—For the installation of electric light in three pairs of new cottages at the Penkhull Children's Homes, for the Board of Guardians. Mr. T. Wood, Clerk, Union Offices, Stoke-on-Trent.

FEBRUARY 5.—**Broadstairs.**—WATER TOWER.—For construction of a reinforced concrete reservoir tower and tank at Rumfields Pumping Station, for U.D.C. Messrs. H. Rolfe & Son, 208, Abbey House, Victoria-street, Westminster, S.W. 1. Deposit £2 2s.

FEBRUARY 5.—**Colwyn Bay.**—ROLLER.—Supply of 10-ton compound roller to the U.D.C. Mr. W. J. Dunning, Surveyor, Council Offices, Colwyn Bay.

FEBRUARY 5.—**Egypt.**—PUMPING PLANT.—For supply and erection of a pumping plant to replace an existing steam plant at Qussassin. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, S.W. 1. Charge 10s.

FEBRUARY 5.—**New Zealand.**—GIRDER SPANS.—Supply of plate girder spans to the Public Works Tender Board, New Zealand, for the Stratford Main Trunk Railway. Department of Overseas Trade, 35, Old Queen-street, S.W. Reference 12569/ED/EC.

FEBRUARY 5.—**Richmond (Surrey).**—PIPES.—Supply of 80 tons of 9 in. and 7 in. dia. cast-iron pipes and special castings to the T.C. Mr. H. Will. Apted, Water Engineer, Waterworks, Richmond.

FEBRUARY 5.—**Sheffield.**—RIVER WALLS, &C.—For construction of mass concrete river walls and blue brick invert to River Sheaf at Broadfield-road, for the T.C. Improvement Surveyor, Town Hall, Sheffield. Deposit £5.

FEBRUARY 6.—**Rawtenstall.**—ELECTRIC LIGHT.—For carrying out electric light installation at extension of Central Market, for T.C. Borough Electrical Engineer, Tramways and Electricity Offices, Bacup-road, Rawtenstall. Deposit 10s. 6d.

FEBRUARY 8.—**Portsmouth.**—ELECTRIC LIGHT.—For carrying out electric light installation at the Grammar School. Clerk to the Governors, Grammar School, Portsmouth.

FEBRUARY 8.—**Tiverton.**—POWER STATION.—For buildings and plant in connection with the installation of an electric supply in Tiverton. Mr. T. E. Corrigan, Gas Office, Blundells-road, Tiverton. Deposit £2 2s.

FEBRUARY 9.—**Bingley.**—ROLLER.—Supply of 10-ton nominal compound steam road roller, also independent scarifier, for the U.D.C. Mr. H. Bottomley, Surveyor, Town Hall, Bingley.

FEBRUARY 9.—**St. Ives.**—WATER-SOFTENING PLANT.—Supply of a water-softening apparatus at alternative prices, for dealing with 100, 150, and 200 gallons an hour, to the Board of Guardians. Mr. G. D. Day, Clerk, The Broadway, St. Ives, Hunts.

FEBRUARY 9.—**Tadcaster.**—ELECTRIC LIGHTING.—For electric lighting, Infectious Diseases Hospital, Garforth, for the R.D.C. Mr. Geo. A. Bromet, Clerk, Tadcaster.

FEBRUARY 11.—**Dunstable.**—HEATING.—For heating offices with hot-water radiators and boiler, for T.C. Mr. W. F. Wilkins, Borough Surveyor, Town Hall, Dunstable.

FEBRUARY 11.—**Gainsborough.**—PUMPING PLANT.—For engine and pumping plant, for the U.D.C. Mr. S. W. Parker, Waterworks Engineer, Council Offices, Gainsborough. Deposit £2 2s.

FEBRUARY 11.—**Sheerness.**—CAST-IRON PIPES.—For supply of 25 tons of 3 in. cast-iron pipes and specials, for U.D.C. Surveyor, Council Offices, Sheerness.

FEBRUARY 11. — **Windsor.**— RECONSTRUCTION OF ENGINEERING SERVICES.—Reconstruction of the engineering services at the Poor Law Institution, Old Windsor, Berks, for the Guardians of the Windsor Union. Constructors must tender for the whole of the work. Mr. Walter W. Nobbs, M.I.Mech.E. (the Consulting Engineer in charge of the works), of 50, Fairhazel-gardens, N.W. 6. Deposit £5 5s.

FEBRUARY 12.—**Carlisle.**—BRIDGES.—For designs and tenders for erection of steel superstructures for two bridges on new loop road, Whitehaven, for the Cumberland C.C. Mr. G. O. Lockwood, County Surveyor, Carlisle. Deposit £2.

FEBRUARY 12.—**Durham.**—BRIDGES.—Construction of new bridges and the widening of existing bridges, for the Durham C.C., viz.: (1) New Derwent Bridge, near Swalwell (three spans and raised approaches); (2) new Lambton Bridge, near Chester-le-Street (three spans and improvement of approaches); (3) new bridge at Croxdale (four spans and new approaches); (4) widening of Browney Bridge near Croxdale; (5) Haughton-le-Skerne new bridge, near Darlington (one span and diverting approaches); (6) Gaunless Bridge, at Bishop Auckland (two reinforced concrete culverts and embankments); (7) widening of St. Helen's Auckland Bridge; (8) Great Burdon Bridge, near Darlington (underpinning foundations and strengthening existing approaches); (9) Whitton, near Stockton (new bridge and approaches); (10) Langley Bridge, near Durham (widening existing structure); (11) Whitehill Gate Bridge, near Chester-le-Street (rebuilding and widening); (12) Ryhope Dene Bridge, near Ryhope (reinforced concrete culverts and embankments). Mr. A. E. Brookes, County Engineer, Shire Hall, Durham. Deposit £2 2s.

FEBRUARY 12. — **Manchester.** — TRACK WORK.— Supply of permanent way special track work to the T.C. Mr. H. Mattinson, General Manager, Corporation Tramways, 55, Piccadilly, Manchester. Deposit £1 1s.

FEBRUARY 12. — **Norwich.** — STEELWORKS.— For the steel constructional work for the new generating station at Thorpe Marshes, for the T.C. Mr. A. E. Collins, City Engineer, Guildhall, Norwich. Deposit £10.

FEBRUARY 12.—**Truro.**—FLOATING BRIDGE.—Construction of a large steam chain floating bridge for use on its ferry service between Devonport and Torpoint, for the Cornwall C.C. Mr. W. L. Platts, Clerk, County Hall, Truro. Deposit £2 2s.

FEBRUARY 13.—**Caistor.**—ELECTRICAL INSTALLATION.—Provision and fitting of a complete electric lighting installation at the Institution of the Board of Guardians. Mr. A. A. Padley, Clerk, Union Offices, Caistor.

FEBRUARY 13.—**Stoke-on-Trent.**—STEELWORK.—For steelwork for foundation to central power house, &c. Borough Electrical Engineer, Stoke.

FEBRUARY 14.—**Argentine.**—POWER STATION.—**For the construction of a central electric power station of 15,000 h.p., for the Argentine State Oilfields Administration. Department of Overseas Trade, 35, Old Queen-street, S.W.**

FEBRUARY 14.—**Portland.**—ROOF.—Taking down of existing roof and constructing reinforced concrete roof for Yeates Reservoir, for U.D.C. Mr. R. Davison, Surveyor, Council Offices, Portland.

FEBRUARY 15.—**London.**—WIRE.—Supply of electric light wire and cable to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, King Charles-street, S.W.

FEBRUARY 16.—**Cromer.**—PUMPING PLANT.—Erection and setting to work of pumping machinery and boiler at the pumping station, Metton, for the U.D.C. Messrs. J. C. Melliss & Co., 156, Gresham House, Old Broad-street, E.C.2. Deposit £5.

FEBRUARY 18.—**Bristol.**—ELEVATOR.—For the construction of a floating pneumatic grain elevator, to handle 150 tons per hour, at the Avonmouth Docks, for the Docks Committee. Mr. T. A. Peace, Engineer, Port of Bristol. Deposit £5.

FEBRUARY 18.—**Dublin.**—STEELWORK.—Supply to the Midland Great Western Railway of Ireland Company of steelwork, for Bridge No. 206. Chief Engineer, Broadstone Terminus, Dublin. Charge 4s.

FEBRUARY 25.—**Edinburgh.**—WASHHOUSE EQUIPMENT.—For the engineering equipment of a new public washhouse to be erected at Abbeymount (including new steam boiler and other relative plant), for the T.C. Mr. James A. Williamson, City Architect, Public Works Office, Edinburgh.

FEBRUARY 27.—**Madras.**—PIPES.—Supply of cast-iron pipes, special castings, &c., to the T.C. Messrs. J. Mansergh & Sons, agents to the Corporation, 5, Victoria-street, S.W.

MARCH 1.—**Jamaica.**—DAM.—For the construction of a cyclopean masonry dam and contingent works required in connection with the extension of the Kingston and St. Andrews Water Works. Crown Agents for the Colonies, 4, Millbank, London, S.W.1.

MARCH 8.—**South Africa.**—POWER STATION.—For steel frame buildings for power station and equipment of power station, &c., for electrification of railways in the neighbourhood of Cape Town, for the Union of South Africa Electricity Supply Commission. Messrs. Merz & McLellan, 32, Victoria-street, S.W. Deposit £10 10s.

MARCH 12.—**Madras.**—PUMPING PLANT.—Supply of sewage pumping machinery to the T.C. Messrs. J. Mansergh & Sons, agents, 5, Victoria-street, S.W. Deposit 10s. each of two contracts.

MARCH 31.—**Egypt.**—PUMPING PLANT.—Supply and erection of a pumping plant at Boseili, for the Egyptian Ministry of Public Works. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Westminster, S.W. 1.

MAY 1. — **China.** — BRIDGE. — **The Commercial Councillor at Peking has forwarded to the Department of Overseas Trade copies of the official text of a call for tenders by the Hai Ho Conservancy Commission, for the erection of a bridge over the Hai Ho at Tientsin. Tenders must be in the hands of the Commission before noon on May 1, 1924. The cost of erecting the new bridge has been roughly estimated at Tls. 700,000, say £105,000. Department of Overseas Trade, 35, Old Queen-street, S.W. 1. Reference 11647/F.E./E.C./2.**

MAY 1.—**Egypt.**—ROOFS, &C.—Construction of steel roofs and shelter of Alexandria new station, for the Egyptian State Railways. Inspecting Engineer, Egyptian and Sudan Governments, Queen Anne's Chambers, Broadway, Westminster, S.W. Charge £6 3s.

NO DATE.—**Birtley.**—ELECTRICAL INSTALLATION.—For supplying and erecting poles and fittings in streets (Council), for the Parish Council. Mr. R. Hobson, Clerk, 6, Gladstone-terrace, Birtley.

NO DATE.—**Bradford.**—ELECTRIC LIGHT INSTALLATION.—For the installation of electric light at the Daisy Hill Institution and at the Stores of the Bowling Park Institution, for the B.G. Mr. Fred Holland, architect, 22, Manor-row, Bradford. Deposit £1 1s.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 4.—**Arbroath.**—ROADS.—For the relaying with granolithic of about 7,000 yds. of footways, for the T.C. Mr. D. H. Shaw, Burgh Engineer, Arbroath.

FEBRUARY 4.—**Loughborough.**—ROADS.—Making-up Knighthorpe-road, for the T.C. Mr. A. H. Walker, Borough Surveyor, Town Hall, Loughborough. Deposit £3 3s.

FEBRUARY 4.—**Southborough.**—HEADINGS.—For driving 100 yds. of headings at the Waterworks at Upper Hayesden, for the U.D.C. Messrs. G. & F. W. Hodson, Loughborough. Deposit £5 5s.

FEBRUARY 4.—**Sutherland.**—WATER MAIN.—For extending the main supply pipe from Londornach to Loch Laoigh, for the Sutherland C.C. Messrs. Geo. Gordon & Co., civil engineers, Inverness.

FEBRUARY 4.—**Waterloo-with-Seaforth.**—SEWERS.—For construction of main sewer on the foreshore between Holden-street and Brooke-road, Waterloo, for U.D.C. Mr. J. R. Fothergill, Surveyor, Town Hall, Waterloo.

FEBRUARY 5.—**Bedlingtonshire.**—ROADS, &C.—For the making-up of Catholic-row, Bedlington, and construction of a sewer near Bridge-terrace, for the U.D.C. Mr. J. W. Pooley, Surveyor, Bedlington.

FEBRUARY 5.—**Cheriton.**—ROADS.—For private street improvement works in Marler-road and Kent-road, for the U.D.C. Mr. A. S. Lilley, Surveyor, Public Offices, Cheriton.

FEBRUARY 5.—**Easington.**—ROADS.—For making-up a number of streets, for the R.D.C. Mr. R. Urwin Harper, Highway Surveyor, Castle Eden, co. Durham.

FEBRUARY 5.—**Enfield.**—SEWER.—Construction of 700 yds. of 9 in. stoneware surface water sewer and laying of 680 yds. of granite kerb, for U.D.C. Mr. H. R. Crabb, Surveyor, Public Offices, Enfield. Deposit £2 2s.

FEBRUARY 5.—**London, N.W.3.**—HOUSE REFUSE.—Daily removal and disposal of pulverised house refuse from the Dust Disposal Dept., adjoining the Metropolitan Railway, West Hampstead Station, N.W.6, for the Hampstead B.C. Mr. Arthur P. Johnson, Town Clerk, Town Hall, Haverstock-hill, N.W.3.

FEBRUARY 5.—**Sedbergh.**—WATER SUPPLY.—For laying about 2,200 lin. yds. of 5 in., 4 in., and 3 in. cast-iron pipes, construction on an intake tank, mechanical filters, concrete service tank (95,000 galls.), &c., for the R.D.C. Messrs. Taylor & Wallin, Commercial Union Buildings, 47, Pilgrim-street, Newcastle-on-Tyne. Deposit £5.

FEBRUARY 5.—**Swansea.**—ROADS.—Supplying and laying asphalt paving, for the T.C. Mr. J. R. Heath, Borough Surveyor, Guildhall, Swansea.

FEBRUARY 5.—**Whitchurch.**—ROLLING.—For steam rolling in their district for one year, for the R.D.C. Mr. John T. P. Clarke, Clerk, Whitchurch, Hants.

FEBRUARY 6.—**Birmingham.**—SEWAGE DISPOSAL.—For the reconstruction of the sewage disposal plant and drains at Wassell-grove Convalescent Home, near Stourbridge, for the Board of Guardians. Mr. James Curtis, Clerk, Union Offices, Edmund-street, Birmingham. Deposit £1 1s.

FEBRUARY 6.—**Birmingham.**—SEWERS.—Construction of 140 yds. brick and concrete sewers, 51 in. and 42 in. in dia., and 3,810 yds. stoneware pipe sewers, 24 in. to 9 in. in dia., in the Billesley Farm Triangle Housing Estate, Billesley, for the T.C. Mr. H. H. Humphries, City Engineer, Council House, Birmingham. Deposit £2.

FEBRUARY 6.—**Cardiff.**—ROADS.—(a) Road widening and culverting at Beulah Cross-roads, and (b) widening Old Church-road, for the R.D.C. Mr. William Farrow, Surveyor, Park House, 20, Park-place, Cardiff.

FEBRUARY 6.—**Rhoose (Glam).**—WATER MAINS.—For providing and laying of about 700 lineal yds. of 4-in. cast-iron water main, with all necessary valves, fittings, &c., at Fontigary-road, Rhoose (near Barry), for the Cardiff R.D.C. Mr. William Farrow, surveyor, 20, Park-place, Cardiff.

FEBRUARY 6.— **Stockton-on-Tees.**— SEWERS.— For the construction of 465 lin. yds. of 9 in. pipe sewers in Bishopton-road, &c., for the T.C. Mr. J. P. Wakeford, Borough Engineer, Victoria Buildings, Stockton-on-Tees.

FEBRUARY 6.—**Watford.**—ROADS.—For construction of new estate roads and sewers, &c., at Wiggenhall, for T.C. Mr. D. Waterhouse, Borough Engineer, Municipal Offices, 14, High-street, Watford. Deposit £2 2s.

FEBRUARY 6.—**Whitchurch (Glam).**—ROAD WIDENING, &C.—For (*a*) road widening and culverting at Beulah Cross Roads, and (*b*) widening of Old Church-road, at Whitchurch, for the Cardiff R.D.C. Separate tenders required. Mr. William Farrow, Surveyor, 20, Park-place, Cardiff.

FEBRUARY 7.—**Acton.**—ROADS.—For (1) extension of Noel-road, including construction of main sewers; (2) resurfacing with granite setts part of dust destructor road, for B.C. Borough Surveyor, Municipal Offices, Acton, W.3.

FEBRUARY 7.—**Kendal.**—ROADS.—For widening and improving the Kendal-Grayhill-Tebay road, for the South Westmorland R.D.C. Mr. J. W. Nelson, Surveyor, 17, Lowther-street, Kendal. Deposit £1 1s.

FEBRUARY 7.—**Londonderry.**—ROADS.—For reconstruction of about 50 miles of roads, for the C.C. Mr. T. B. Adams, Secretary, County Courthouse, Londonderry.

FEBRUARY 7.—**Stockport.**—MANUAL AND TEAM LABOUR.—For (1) manual and team labour for paving and repairing carriageways; (2) manual and team labour for masons' work on footpaths, &c., for T.C. Mr. H. Hamer, Borough Surveyor, Town Hall, Stockport.

FEBRUARY 7.—**Swansea.**—SEWERS.—For construction of stoneware and cast-iron sewers at Llansamlet, totalling 9,943 lineal yds., for the T.C. Mr. J. R. Heath, Engineer, Main Drainage Dept., Guildhall, Swansea. Deposit £5 5s.

FEBRUARY 8.—**Aberystwyth.**—SEWER WORKS.—For carrying out for B.C. the construction of sewers, with manholes and storm overflows. Messrs. James Diggle & Son, engineers, 14, Brown-street, Manchester. Deposit £3 3s.

FEBRUARY 9.—**East Lothian.**—EXTENSION OF MAINS.—For construction of pipe lines between Humble Station and Fountain Hall, for the East Lothian Western District Water Board. Water Superintendent, Bank of Scotland Buildings, Haddington. Deposit £2 2s.

FEBRUARY 9.—**Lancashire.**—ROADS.—Construction of a new road and the widening and reconstruction of part of the existing main road between the "Rose and Crown Inn," Much Hoole, and Sollom, for the Lancashire C.C. County Surveyor, County Offices, Preston.

FEBRUARY 9.—**Penistone.**—SEWAGE EXTENSIONS.—Laying about 350 lin. yards of surface water drains, together with extensions and alterations to the sewage disposal works, for the U.D.C. Mr. F. J. Rodwell, 37 and 38, Prudential Assurance Buildings, Park-row, Leeds. Deposit £2 2s.

FEBRUARY 11.—**Bedwellty.**—STREET WORKS.—For carrying out, for the Bedwellty U.D.C., the following street works: Sewering, levelling, metalling, flagging, channelling and making good (*a*) Pentwyn-street, Blackwood, (*b*) South View-road, Blackwood, (*c*) Pentwyn-avenue, Blackwood. Mr. Dan. H. Price, Surveyor, Council Offices, Aberbargoed.

FEBRUARY 11.—**Coseley.**—SEWERS.—Construction of stoneware and cast-iron sewers, from 6 in. to 24 in. diameter, &c., for the U.D.C. Messrs. Berrington, Son & Watney, Prudential Chambers, Lichfield-street, Wolverhampton. Deposit £5 5s.

FEBRUARY 11. — **Eccles.** — SEWAGE WORKS.—For additions and alterations to the sewage works of the T.C. Mr. Thomas S. Picton, Borough Engineer, Town Hall, Eccles. Deposit £3 3s.

FEBRUARY 11.—**Huddersfield.**—SEWERS.—Construction of 1,388 lineal yards of earthenware pipe and cast-iron pipe sewers, of internal diameters varying from 5 in. to 12 in., in two sections, for the T.C. Borough Engineer, 1, Peel-street, Huddersfield.

FEBRUARY 11.—**Manchester.**—ROADS.—(1) Construction of carriageway and footway, Princess-road; (2) construction of carriageway and footway, Kingsway-road; (3) construction of second carriageway and footway, Royton to Failsworth-road, for the T.C. City Engineer, Town Hall, Manchester. Deposit £2 2s.

FEBRUARY 11.—**Repton.**—SEWERS.—For laying 700 yds. of 9 in. stoneware pipe sewers, &c., at Linton, for R.D.C. Messrs. Willcox & Raikes, 63, Temple-row, Birmingham. Deposit £5 5s.

FEBRUARY 12.—**Birkenhead.**—SEWER.—For the construction of 421 yds. of brick and reinforced concrete sewer, and 580 yds. of reinforced concrete sewer, for the T.C. Mr. C. Brownridge, Borough Engineer, Town Hall, Birkenhead. Deposit £3 3s.

FEBRUARY 12.—**Southgate.**—ROADS.—(1) Widening and making-up part of Bourne Hill; (2) widening and making-up Wolves-lane; (3) sewers in Winchmore Hill-road; (4) sewer in Eversley Park-road, for the U.D.C. Mr. R. Phillips, Surveyor, Town Hall, Palmers' Green, N.

FEBRUARY 12.—**Worsborough.**—SANITARY.—For the conversion of trough closets into pedestal latrines, pointing to walls, &c., at Worsborough Blacker Council School, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 13.—**Eccles.**—ROADS.—For making-up Cavendish-street, Vaughan-street (part of), back Catherine-street South, No. 1, back Catherine-street South, No. 2, and various passages, for the T.C. Mr. Thomas S. Picton, Surveyor, Town Hall, Eccles. Deposit £1 1s.

FEBRUARY 13.—**Edmonton.**—TENNIS COURTS.—For laying of twelve hard tennis courts at Recreation Ground, Church-street, for the U.D.C. Mr. Cuthbert Brown, Surveyor, Town Hall, Edmonton, N.9.

FEBRUARY 13.—**Fulham.**—ROADS.—For making-up Sulivan-road, for B.C. Mr. A. F. Holden, Borough Surveyor, Town Hall, Fulham, S.W.6.

FEBRUARY 13.—**London.**—REFUSE REMOVAL.—For removal of furnace refuse, &c., for periods of six and twelve months, for Metropolitan Water Board. Chief Engineer, Metropolitan Water Board, New River Head, 173, Rosebery-avenue, E.C.1.

FEBRUARY 13.—**Middleton.**—ROADS.—For making-up Cowper-street, Laurel-street, and Saville-street, Middleton Junction, and for partial making-up Mary-street, Glebe-street, and Mitchell-street, Middleton, for T.C. Borough Engineer, Town Hall, Middleton, Lancs.

FEBRUARY 13.—**Rothesay.**—SEWERAGE.—For reconstruction of certain sewers within the town, together with an intercepting outfall sewer, 2,610 yds. long, for T.C. Mr. J. B. Brodie, engineer, 141, West George-street, Glasgow. Deposit £5.

✱FEBRUARY 13.—**Wembley.** — PUBLIC CONVENIENCE. — Construction of a public convenience at Wembley Green, within the Wembley Urban District. Mr. Walter H. Lewis, acting Engineer and Surveyor, Council Offices, Wembley, Middlesex. Deposit £2 2s.

FEBRUARY 14.—**Lambeth.**—ROADS.—For tar-spraying of roads for one year, for the B.C. Mr. B. Cattlin, Borough Engineer, Town Hall, Brixton-hill, S.W.

FEBRUARY 16.—**Greenock.**—ROADS, &C.—Construction of streets and sewers in connection with the Cowdenknowes housing scheme, for the T.C. Office of Public Works, Municipal Buildings, Greenock. Deposit £1 1s.

FEBRUARY 16.—**Seisdon.**—SEWAGE WORKS.—Construction of sewerage and sewage disposal works at Codsall, for the R.D.C. Mr. W. Cannan, engineer, Wombourn, Wolverhampton. Deposit £5 5s.

FEBRUARY 18.—**Hertford.**—SEWAGE WORKS.—Construction of activated sludge treatment works, for the T.C. Messrs. J. Taylor & Sons, 36, Victoria-street, S.W. Deposit £5.

FEBRUARY 18.—**Wigan.**—RECONSTRUCTION.—For reconstruction of the Hoscar and Pemberton sewage dispoal works, for T.C. Mr. R. B. Donald, Borough Engineer, Municipal Buildings, Wigan. Deposit £3 3s

FEBRUARY 18.—**Wimbledon.**—ROADS.—For the making-up of Laurel-road, Melbury-gardens (Section 1), Melbury-gardens (Section 2), for the B.C. Borough Engineer, Town Hall, Wimbledon.

FEBRUARY 19.—**Batley.**—EMBANKMENT.—For the construction of an embankment, &c., for the formation of a reservoir, with ancillary works, in the Valley of the River Holme, a few miles from Holmfirth, for the T.C. Messrs. G. H. Hill & Sons, civil engineers, 40, Kennedy-street, Manchester. Deposit £5 5s.

FEBRUARY 22.—**Adwick-le-Street.**—SEWAGE DISPOSAL WORKS.—Extensions to the sewage works, for the U.D.C. Mr. George Gledhill, Surveyor, Council Offices, Adwick-le-Street. Deposit £3.

MARCH 1.—**Montgomeryshire.**—STORAGE RESERVOIR AND WATER MAINS.—Construction of a small storage reservoir, and the laying of a main in connection with an additional water supply, for the T.C. of Llanidloes. Mr. James Grant, Surveyor, Llanidloes, Montgomeryshire.

NO DATE.—**Boroughbridge.**—BOWLING GREEN.—For the laying of a bowling green at Boroughbridge. Secretary, Cricket Club, Boroughbridge.

Competitions.

(*See Competition News, page* 172

Auction Sales, Tenders, etc.

✱FEBRUARY 5 AND THE FOLLOWING DAYS.—**Renfrewshire.**—Messrs. James Laird & Son will sell by direction of the Messrs. George Cohen & Armstrong Disposal Corporation, at C.S. Depot No. 83, Georgetown, Renfrewshire, contractors' and miscellaneous stores, office furniture, &c. Auctioneers, 70, Bath-street, Glasgow.

✱FEBRUARY 6.—**Aldershot.**—Messrs. Hewett & Lee will sell, by direction of the George Cohen & Armstrong Disposal Corporation, at R.E. Stores, Stanhope, Marlborough and Wellington Lines, a large assortment of surplus stores, building, ironmongery accessories, &c. Auctioneers, 144, High-street, Guildford, and South-street, Farnham.

FEBRUARY 7.—**London, E.9.**—Mr. F. H. Clark will sell, without reserve, final clearance auction sale of all remaining timber and builders' material resultant of the demolition of the National Projectile Factory, Hackney Marshes, E.9. Auctioneer, Railway Wharf, York-road, Wandsworth, S.W.18.

FEBRUARY 7. — **London, W.1.** — Messrs. Knight, Frank & Rutley, in conjunction with Messrs. Oakden & Co., will sell, by direction of the Eastbourne Waterworks Company, the freehold commercial site of about 4¼ acres, including detached double-fronted residence, factory and warehouse buildings. Auctioneers, 20, Hanover-square, London, W.1.

FEBRUARY 12. — **Bloomsbury.**— Messrs. J. W. Coade, Son, & Budgen will sell, by order of the National Council of Y.M.C.A.s, valuable building materials forming the standing structures known as the Shakespeare Hut, Gower-street, Bloomsbury, W.C.1. It will be offered for sale in one lot on the premises. Auctioneers, 118, Southampton-row, W.C.1.

✱FEBRUARY 12.—**London, E.C.4.**—Messrs. Henry Butcher & Co. will sell, at the London Auction Mart, 155, Queen Victoria-street, E.C.4, the freehold showrooms, warehouse, or workshops, Nos. 61, 63 and 65, Loanpit Vale, Lewisham, S.E.13. Auctioneers, 63 and 64, Chancery-lane, W.C.2.

✱FEBRUARY 12.—**Oxted, Surrey.**—Mr. C. E. Clark will sell, without reserve, at Master Park, Oxted, Surrey, timbers and building effects, 300 squares, weather boards, 300 deal four-panel doors, &c. Auctioneer, Beddington House, Beddington, near Croydon.

✱FEBRUARY 21.—**London, N.**—Messrs. Veryard & Yates will sell, without reserve, at 109, Stoke Newington-road, N., a large stock of building materials of various varieties. Auctioneers, 365, Norwood-road, S.E.27.

FEBRUARY 21.—**Orpington, Kent.**—Messrs. W. Levens & Son, F.A.I., will sell by auction (unless previously disposed of by private treaty), by order of the executrix of the late Mr. H. M. Glassup, Orpington, Kent, on the premises, freehold business premises known as "Mayfield Cottage," High-street, together with the goodwill and stock-in-trade of a sanitary engineer and decorator. Auctioneers, Station-approach, Orpington.

MAY 6.—**London, W.1.**—Messrs. Knight, Frank & Rutley, at the Hanover-square Estate Room, situate at Wimbledon Common, within half-an-hour by motor of the Houses of Parliament. Freehold, Edgecombe Hall, Beaumont-road; extensive range of outbuildings, in all extending to over 14 acres. Vacant possession will be given on completion of the purchase. Auctioneers, 20, Hanover-square, W.1.

Public Appointments.

✱FEBRUARY 6.—**Manchester.**—Clerk of Works required by the Education Committee to supervise erection of new schools, &c. Chairman of the Education Committee, Education Offices, Deansgate, Manchester.

✱FEBRUARY 11.—**Romford, Essex.**—Clerk of Works required in connection with the extension of the Hospital, &c., at the Institution, Romford Union. Mr. Raymond H. Mason, Clerk to the Guardians, Union Offices, The Institution, Romford.

✱FEBRUARY 13.—**Harrow-on-the-Hill.**—Town Planning Assistant required in the Surveyor's Department. The appointment will be a temporary one, preference being given to those who hold the Certificate of the Town-Planning Institute. Mr. John Strachan, Clerk to the Council, Council Offices, Harrow.

✱FEBRUARY 16.—**London, E.**—Works Manager required in the Borough Engineer's Department by the Council of the County Borough of West Ham. Town Clerk, Town Hall, West Ham, E.15, together with not ess than three recent testimonials.

✱NO DATE.—**Woolwich, S.E.**—Required at once, for temporary service under the Commanding Royal Engineer, Woolwich, (a) Clerk of Works, (b) Surveyor's Clerk. C.R.E., R.E. Office, New-road, Woolwich.

Builder's Estate.

Mr. Henry Herbert Ellis, of Moorfield-road, Pendleton, Lancs, builders' merchant, Salford, left £20,201, with net personalty £20,163.

PROPOSED NEW BUILDINGS & OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ABERDEEN.—Plans passed by T.C.: House, Bon-Accord-street, for Mr. Robert M. Ross, per Mr. G. Bennett Mitchell, architect; bungalow, Andersondrive, for Mr. John Milne, wholesale merchant, per Mr. George Watt, architect; bungalow, Hilton-street, for Mr. Hugh M'Kay, grocer, per Messrs. Williamson & Bell, architects; alterations at Union Works, Guild street, for Pirie, Appleton & Co., Ltd., per Messrs. Jenkins & Marr, architects; reconstruction of roof at No. 41, Regent-quay, for Messrs. George Garrod & Sons, coopers, per Mr. George Watt, architect; alterations at the Royal Infirmary (Surgical Block), for the Directors, per Messrs. Kelly & Nicol, architects; six houses, Broomhill-road, for the Broomhill Home Building Syndicate, per Messrs. M'Andrew & Sutherland, architects; extension of premises, Berryden-road, for the Northern Co-operative Society, Ltd., per Messrs. Wilson & Walker, architects; hall and priest's house, Water-lane, for the Trustees of St. Clement's Episcopal Church, per Messrs. Kelly & Nicol, architects; two houses, Hammerfield avenue, for Mr. William Murray, builder; bungalow, Hilton-street, for Mr. Thomas T. Dobbie, manager, per Mr. William E. Gauld, architect; two houses, Ashley-road and north side of Ashley-gardens, for Mr. John Rodger, commercial traveller, and Mr. James Philip, manager, per Messrs. D. & J. R. M'Millan, architects; bungalow, Deemount-road, for Mr. William Thomson, retired teacher, per Messrs. D. & J. R. M'Millan, architects; three houses, Froghall-terrace, for Mr. Alexander Leask, carpenter, per Mr. George Watt, architect; two bungalows, Gray street, for Mr. Alexander Ritchie, fruiterer, and Mr. Alexander Forrest, ship steward, per Messrs. Sutherland & George, architects; bungalow, Deemount road, for Mr. James Moir, Culduthil, Inverness, per Messrs. D. & J. R. M'Millan, architects; two houses, Ashley-gardens, for Messrs. D. & J. R. M'Millan, architects; two houses, Brighton-place, for Messrs. D. & J. R. M'Millan, architects; bungalow, Broomhill-road, for Mr. John M. Frost, spirit merchant, per Mr. William E. Gauld, architect.

ABRAM.—Plans of a house in Leigh-road, for Mr. F. Bowdell, have been passed by the U.D.C.

ACCRINGTON.—A shelter for children attending Spring Hill Council School is under consideration.

ADLINGTON.—To consider the question of a war memorial for the district, a public meeting was held in the Congregational Church School. After discussion it was resolved to request the D.C. to proceed with the acquisition of the Grove Field as a recreation ground and playing field to serve the purpose of a war memorial, the estimated cost, £1,500, to be raised by public subscription or by other voluntary efforts.

AMPTHILL.—Plan passed by U.D.C.: House, Chandos-road, for Mr. G. Botsford.

ANNFIELD PLAIN.—The U.D.C. have received intimation that the South Derwent Colliery Company, Ltd., contemplates building 80 houses at West Kyo, near the Council's housing site.

BEDFORD.—Plans passed by T.C.: Mr. E. H. C. Inskip, for Miss D. Dugmore, bungalow, London-road; Mr. G. P. Allen, for the Governors of the Harpur-Trust, lavatories, "East Lodge," Cardington-road; Mr. I. Daughtry, for Mr. F. Redman, alterations 62, St. Loyes-street.

BELFAST.—Plans passed: Four villas, off Irwin-avenue, for Mr. James H. Barton; villa in Marlborough Park, for Miss A. Matier (architect, Mr. J. Hosie); clubhouse, near Downview-avenue, for the Council of the Fortwilliam Golf Club (architect Mr J. C. Stevenson); lecture hall, on Donegall-road, for the committee of the Sandy-row Methodist Church (architect, Mr. F. D. Brown); villa, in Blodon-drive, for Mr. T. R. Malcolmson (architect, Mr. James Hunter); stores, in Ravensdale-street, for Mr. George McCall (architect, Mr. R. Lynn); additions to shops and warehouses, in King-street and Mill-street, for Mr. John Adams (architects, Messrs. Hobart & Heron); additions to match factory, on Donegall-road, for Messrs. Maguire & Patterson (architect, Mr. S. Stevenson); 12 villas, in Sagimor-gardens, for Mr. Hugh Mills (architect and builder, Mr. R. Barton); 38 terrace houses, in Connsbrook-street, for the East Belfast Building Society; villa, in College Park, for and to the plans of Mr. D. B. Marr.

BILLINGE.—The D.C. have decided to include in the estimates for next year a sum towards the cost of the proposed widening of Gantley-road and Rainford-road, in the first case to 50 ft., and the second to 33 ft. That the cost of land, estimated at £101 for Gantley-road, be met during the next financial year, and the narrowest part of Rainford-road be widened to begin with.

BIRKENSHAW.—Plans passed: Lay-out of estate in Station-road by Messrs. Jowett & Grayshon, and garage at "The Bungalow," in Bradford-road, for Mr. Swetenham. The U.D.C. has accepted a tender amounting to £1,811 for laying a concrete causeway from the Half Way House to the boundary at Drigling-ton. A start will be made with the work immediately the sanction of the West Riding C.C. is forthcoming.

* See also our List of Contracts, Competitions, etc.

BLACKBURN.—The B.G. have approved the principle of erecting a Children's Hospital and Maternity Ward apart from the present Queen's Park Hospital.

BROMLEY.—Plans passed by T.C.: Two houses, Woodside-road, Mr. L. Jefford; house, Bromley Common, Mr. F. G. Crickett; two bungalows, Sunningdale-road, Messrs. Ecott, Widgery & Ecott; shop, High-street, Messrs. Lyons & Co., Ltd.; two houses, Avondale-road, Mr. A. Frampton.

BURY.—Plans have been approved for a pair of bungalows and 10 houses in different parts of the town. The Plans and Streets Improvements Sub-committee have considered the carrying out of street improvements in Roch-street, Stanley-street, Clough-street and bottom of Walmersley-road. Plans were presented of the proposed new bridge over the River Irwell at Warth Fold, in connection with the new road. The Borough Engineer was instructed to carry out such repairs as were necessary at the north end of Harwood-road. The Walshaw Mission Sunday School and Chapel require tenders for painting the outside and varnishing the inside of the premises. Mr. J. Heys, 35, Church-street, Walshaw, is the secretary.——The Corporation have instructed their Engineer to enquire with respect to land required for the widening of the bridge over the Goyt in Ainsworth-road. The Bury Cinematograph Co., Ltd., have purchased the Castle Cinema, Bolton-street. Alterations and improvements will be carried out.

CARSHALTON.—Plans passed by U.D.C.: House, the Crossways, for Mrs. Mair; bungalow, Downs-road, for Mr. Jago; rebuilding Lower Mill, Butterhill, for Mr. C. R. Leech; five shops, High-street, for Mr. Newman; house, Upland-roads, for Mr. A. R. Wordsworth; two pairs of houses, Harrow-road, for Mr. Hutcheson; four pairs of houses, Carshalton-road, for Mr. W. J. Wyatt; ten houses, Upper Vernon-road and twelve houses, Bramley road, by Messrs. Edser & Brown; pair of houses, Windborough road, for Mr. J. W. Harrison; house, Upland road, for Mr. J. Chapman; pair of houses, Carshalton-grove, for Mr. C. T. Lawrence; 28 cottages and eight flats, for the Carshalton U.D.C.

CASTLEFORD.—Plans passed: Three houses in Charles-street, for Mr. Sainter; and one house in Pretoria-street, for Mr. Sainter.—The Surveyor has been instructed to make a 15 ft. roadway at the Markets in tar macadam.

CHEADLE.—Application has been made to the D.C. for subsidy grant for houses proposed to be erected by Mr. Murphy for 12 houses on land co-extensive with Church-road; Mr. W. Whitehead for two pairs semi-detached houses in Warren-avenue; Messrs. W. H. Hammond & Co. for one pair semi-detached in Swan-lane, Cheadle Hulme. The D.C. instructed their Surveyor to prepare plans and estimates for a sewer to be provided from Wiggin's-hill to the corner of Finney-lane.

CHESTER-LE-STREET.—The R.D.C. have approved plans submitted by the Lambton and Hetton Collieries, Ltd., for the erection of six houses at Fence Houses. The Council also decided to build 20 at Lumley by direct labour. The M.H. are to be asked to sanction the granting of the subsidy for 100 houses for the three months ending March 27, 1924.

CHORLEY.—The T.C. have approved the following recommendations of the Unemployment Sub-Committee relating to schemes to relieve unemployment: (1) A scheme for widening, where practicable, Southport-road to 60 ft.; (2) the widening of Buxton-lane where the road bends sharply; (3) laying out and draining of the Dissenters Ground at the Cemetery. The Town Clerk has been directed to acquaint the Corporation's technical advisers, Messrs. Dodd, Dodd & Watson, with the diversion of the river Chor into the sewers to the main sewage works, for the engineering firm's consideration, the Sanitary Committee having made alternative suggestions for the treatment of the river water, which would involve no change in the amount of loan applied for.

CLITHEROE.—The Surveyor has been instructed to prepare a scheme for the widening of the road on both sides near the park gates at Brungerley Bridge.

CRANBROOK.—Plans passed by R.D.C.: House at Hartley, for Mr. Middleton; house at Hawkhurst, for Major Townsend.

DARWEN.—The Co-operative Society have decided to make a start with the house building experiment on the Two Gates site. It is also intended to provide a reading-room at Hollins-grove on premises recently acquired.——Schemes for work for the unemployed by the D.C. include widening and improving Bog Height-road, and widening and improving footpath opposite Astley Bank.

DUBLIN.—Plan passed: Two shops and dwellings in Dolphin's Barn-street, for Mr. F. J. Poole.—Plans have been prepared by Mr. F. J. McAuley, architect, 24, Nassau-street, for the building of two shops and house over Dolphin's at Barn-street, for Mr. F. J. Poole

DUNBAR.—The Board of Health have sanctioned the erection of four additional houses under the housing scheme, thus bringing the number up to sixteen.

DUNDEE.—Plans and sections of proposed new buildings, &c., in Dundee have been lodged at the office of the City Engineer: Bingham-terrace, house and garage, for Wm. Gavine; Blackness-road, house, for David McCall; Gardner-street, &c., tenements, for Dundee T.C.; Seagate, alterations for the Loyal Order of Ancient Shepherds; Shepherd's Loan, house, for Agnes H. Shand; Strathern-road, garage for Bruce, Son, & Norton.

EASTRY.—Plans approved by R.D.C.: Four bungalows, Eythorne, for Mr. R. Terry; bungalow, Preston Hill, Wingham, for Mr. F. A. Pilcher.

EDINBURGH.—Warrants granted by Dean of Guild Court: Messrs. M'Kendrick & Co., six houses at Saughton Hall-drive; Mr. Thomas Robertson, cottage at Saughton-road, Corstorphine.

EGREMONT.—Plans have been submitted to the Cumberland E.C. for the erection of a new elementary school at Thorn Hill, at an estimated cost of £16,000.

FRINTON.—The U.D.C. having applied for sanction to borrow £10,000 for cliff protection and sea defence, Mr. A. W. Brightmore, of the M.H., has held an inquiry, when the surveyor (Mr. Smith) stated that it was to be a plain sea-wall of concrete, faced with granolithic blocks to form the steps. It would act also as a retaining wall.

GLAMORGAN.—The County E.C. proposes to acquire Gnoll House, Neath, for purpose of converting same into a school.—The Penybont R.D.C. has received a report indicating that 75 houses are contemplated by applicants for subsidy assistance, and that a further 150 houses to be erected by private enterprise are likely to be commenced upon in the course of three months. The Council has received plans of proposed new mixed explosives magazine for Messrs. Nobels Explosives Co., Ltd., at Tondu. In accordance with the Council's instruction the surveyor has prepared plans for proposed additional Council houses at Pencoed and Llangynwyd. The Aberkenfig Building Club has notified the Council of its intention to erect a further 30 houses in the Penybont area. The Council proposes to erect new gas works buildings at Aberavon. The B.C. has applied to M.H. for sanction to erect an additional 100 houses. Formal notice has been given by Mr. Aaron John Legg, of Breen Reed Hotel, Aberavon, that he proposes to build a hotel at Clyne Farm, Clyne, Neath.—The M.H. is to hold a public inquiry into application of Caerphilly U.D.C. to acquire lands for the purpose of erecting Council offices and public lavatories.—Sanction has been received by the Penarth U.D.C. to its proposal to subsidise house building. In all subsidies are approved for 52 working-class houses, 40 of which are to be built by the Penarth Mutual Building Society.

GREAT YARMOUTH.—The T.C. has passed plans prepared by the Borough Engineer for works at the East Quay and North Pier, estimated to cost £7,500.

HAILSHAM.—Plans passed by R.D.C.: House, London-road, Hailsham, for Mr. M. L. Lambert, of Eastbourne; house in Station-road, Hailsham, for Mr. A. E. Mason, of Hailsham; bungalow, Newick-road, Heathfield, for Mr. W. N. C. De Mattos, of Eastbourne; bungalow in Bexhill-road, Ninfield, for Mr. A. D. Kiernander, of Bexhill; detached house in Bexhill-road, Ninfield, for Mrs. Beaumont, of Ninfield.

HEMEL HEMPSTEAD.—Plans passed by R.D.C.: Bungalow for Mr. H. Harris, Frenches Farm Estate, Chipperfield; also the following plans for which a subsidy grant was requested: Pair of houses, Frenches Farm Estate, for Mr. R. Marton; two bungalows, Shantock Farm-road, for Mr. G. Steer.

HURST.—The Housing and Town Planning Committee resolved that subsidies be granted in the following cases:—E. Marchall & Sons, four houses in Higher King-street; W. Adams, four houses in Smallshaw-lane; H. Bracegirdle, one bungalow, in Higher King-street; S. Dyson, one bungalow in Higher King-street; and Messrs. Watson Bros. & Allen, two houses in Gorsey-lane.

ILFORD.—Plans passed by U.D.C.: L.C.C., three lock-up shops and dwellings, Bennetts Castle-lane (corner of Linkway); J. G. P. Meaden, alterations to cottages, Dr. Barnardo's Homes, Barkingside; T. S. Lello, bungalow, Barley-lane; P. E. Brand, Ltd., 24 houses, 3 to 26, Kingsfield-gardens, Eastern-avenue; P. E. Brand, Ltd., shop, Eastern-avenue; E. A. Russell, 7 houses, 26–38, St. Luke's-avenue; A. G. Manning, 16 houses, 29–59, St. Luke's-avenue

JERSEY.—Miss E. A. Barreau has offered £8,000 for the erection and endowment of an art gallery in Jersey

KERESLEY.—To meet the needs of the district where the Warwickshire Colliery Co. are building 1,000 houses, the Warwickshire C.C. intend to erect a school.

KILKEEL.—Sanction has been given to the proposal of the Council to borrow £8,000 for the purpose of a new hospital; the balance of £3,000 will be a grant from the Ministry of Labour.

LANCASTER.—The Lancaster T.C. announced that the Government had approved the scheme for widening the road from Owen-road to Scale Hall corner, thereby completing the new road to Morecambe. In addition, approval has been given for the extension of the electricity mains and for the laying of a new water main to augment the Morecambe and Heysham supplies. The West Lancashire Territorial Association has purchased land at Carnforth and Prescot on which will be erected new headquarters for the local companies. The Carnforth Co., which is attached to the 5th King's Own Royal Reg., will have up-to-date headquarters, consisting of clubrooms for officers, N.C.O.'s and men, a drill hall, and a miniature rifle range. It is hoped to have the plans completed very shortly. The Prescot Company is attached to that important branch, the Divisional Signals, and it is hoped to obtain sanction to proceed with the building in the immediate future. At Horwich, too, the headquarters of the Signals are to be extended.

LEEDS.—The Tramways Committee propose to carry out the work of providing new covered shelters at the tram barriers in Briggate. The plans are in course of preparation. Messrs. Reynolds & Branson, Ltd., manufacturing chemists, have acquired the shop property adjoining their own premises in Lower Briggate. These premises are to be reconstructed, and tenders for the work are to be invited by the architect, Mr. W. F. Dawson, Albion-street, Leeds.

LIMEHURST.—The Manchester District Regional Committee had several tentative proposals before them for new roads through the Limehurst area. These include a road from Failsworth through Woodhouses to Ashton, with a branch off to Droylsden, and another from Hurst along Lees New-road through Springhead, to join Huddersfield-road beyond Oldham. The surveyor said it was also suggested that one new road should run from Richmond-street, Ashton, across the railway to Newmarket-road, towards the north-east side of Daisy Nook and past the Crime Lake to Failsworth.

LLANDUDNO.—The U.D.C. has decided to apply to the M.H. for sanction to borrow £5,870 to defray the cost of the erection of a golf house on the magnificent municipal links at Maesdu.

LONDON (HAMMERSMITH).—The L.C.C. has sanctioned the B.C. borrowing £21,938 for housing purposes.

LONDON (LEWISHAM).—Plans passed by B.C.: Two houses, Stanstead-road, for P. Smith; two houses, Marvels-lane, for G. W. Crosby; 40 houses, Ewhurst-road, for A. J. Glock; four flats, Sydenham Park, for Griggs & Son; house, Chinbrook-road, for Banks-Martin, Hammond & Co.

LONDON (PADDINGTON).—The Baths and Washhouses Committee is recommending that it be referred to them to prepare a detailed scheme and estimate for developing the Porchester-road frontage of "The Lodge" site by erecting thereon a public hall, shops, offices, and if practicable, a lending library.

LONDON (ST. PANCRAS).—Vicarage, adjoining St. Mark's Church, Regent's Park-road.

MALDON.—The T.C. has a scheme for the widening and extension of the Marine Parade at a cost of £7,878, subject to a loan being allowed and a grant being made by the Unemployment Grants Committee.

MANCHESTER.—The Manchester Housing Committee approved a report which had been prepared in favour of acquiring 41½ acres of land lying between Old Hall-lane, Yew Tree-road and Town Planning-road No. 22 in the district of Withington. On this land it is proposed to erect 484 houses and to reserve certain sites for shops. The Governors of the Grammar School have appointed Messrs. P. S. Worthington and F. Jones, F.R.I.B.A., of 178, Oxford-street, to collaborate plans for the proposed new Grammar School to be erected on a site at Fallowfield.

MIDDLESBROUGH.—The Corporation Plans Committee have approved two sets of plans with respect to houses.

MORECAMBE.—Plans passed by T.C.: Mr. J. R. Richardson, eight houses in Balmoral-road; Mr. A. Rycroft, motor-house, &c., West End-road; Mrs. Nuttal, motor-house, Balmoral-road; Morecambe Corporation, engine house and laboratory at Gas Works; Atkinson & Halliday, pair of semi-detached houses in Bare-lane.

OLDBURY.—The E.C has again informed the Worcester C.C. Education Authorities of the urgent necessity for the provision of a new secondary school. The present accommodation is totally inadequate for present-day requirements.

PENISTONE.—The U.D.C. has decided to adopt a building scheme comprising 16 houses to the acre, with a minimum ground space of 300 yards per constructed house, with a stipulated period of twelve months for the completion thereof, the Council's subsidy to be £100 per house.

PRESTON.—Plans passed by T.C.: W. Smirk & Sons, 10 houses, Powis-road; R. Hothersall, 10 houses, Miller-road; J. Nightingale for Miss Hollyoak, house, Addison-road; J. Nightingale for Mr. Marks, house, Addison-road; G. Moorcroft, bungalow, Ribbleton-avenue; A. C. M. Lillie for A. Topping, bungalow Mayfield-road; G. Westcott for Messrs. Boddingtons' Brewery, alterations, Long-lane; F. Howorth for W. Beetham, house, Garstang-road; F. Howorth for Messrs. Miller & Wilkinson, two houses, Woodlands-avenue; J. J. Cox, dairy, 134, Adelphi-street; A. J. T. Ellison for T. Walmsley, additions, 76, Ripon-street; W. Mather, four houses, Winckley-road; A. J. T. Ellison for T. Sumner, house, Long-lane; J. C. Muir for A. Fiddler house, Holmrook-road; M. Wade, warehouse, Tenterfield-street; E. J. Andrew for T. Southworth, house, Holme Slack-lane.——The Housing Committee recommend the Council to prepare a town-planning scheme for the whole of the land within the Borough lying at the south of Broadgate, Fishergate-hill, Fishergate, Church-street and Newhall-street. The Ribble Committee ask for authority to construct a road on the north side of the dock from the timber pond entrance to the west end of the basin, at an estimated cost of £3,908. Application is to be made to the Unemployment Grants Committee for a grant in aid of the works. The Street and Buildings Committee recommend that Addison-road from Plungington-road to Brook-street, be sett paved, and from Brook-street to the canal bridge be paved with macadam and tar slag, at an estimated cost of £8,500. They recommend that the M.T. be applied to for a grant. With regard to the arterial road, the Finance Committee have approved the amended plan showing the improvement at Deepdale-road, involving the removal of the Isolation Hospital Lodge, at a cost of £4,200, including £560 for the provision of attendants' room, waiting room, &c., at the proposed new entrance to the hospital. A Committee has been formed to consider the provision of a town's war memorial of a monumental character, and as to the site upon which it is to be erected.

ROTHWELL.—Plans passed by U.D.C.:—Two houses at Denby Dale-road, Durkar, for Messrs. Wilson Bros.; bungalow, Durkar Low-lane, for Mr. S. Exley; house and shop, Pontefract-road, Sharlston, for Mr. H. Taylor.

SADDLEWORTH.—The D.C. has decided to apply for sanction to proceed with the erection of 50 houses under the subsidy scheme.

SCARBOROUGH.—Improvements at the Spa, estimated to cost between £12,000 and £14,000, were indicated at the annual meeting of the Scarborough Spa Co.

SEATON.—The application of the U.D.C. to borrow £4,250 for the construction of the eastern promenade, supported by a sea-wall to run from the existing promenade to the Chine, has been the subject of an inquiry by Mr. F. O. Stanford, M.H. Inspector.

SLOUGH.—Plans passed by U.D.C.: Mr. E. Stiles, house in Langley-lane; Miss Peacock, house in Queen's-road; Mr. J. H. Smith, house, Queen's-road.

STRATFORD-ON-AVON.—To find work for the unemployed and accommodate increased traffic, the T.C. proposes to widen the ancient Clopton Bridge, at a cost of over £20,000.

TEIGNMOUTH.—Plans for a new hospital have been placed before the committee by Mr. Leslie Moore, F.R.I.B.A. The building suggested would include

(*Continued on p. 204.*)

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	3 19 0
Second Hard Stocks	3 14 0

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 13 3	Best Blue Pressed Staffs.	9 0 0
Do. grooved for plaster	2 15 3	Do. Bullnose	9 10 0
Do. Bullnose	3 8 3	Blue Wire Cuts	7 0 0
Best Stourbridge Fire brick:—			
2½ in.	11 3 0	3 in.	13 2 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers	22 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
		One Side and two Ends	31 10 0
		Two Sides and one End	32 10 0
Headers	21 10 0	Splays and Squints	30 0 0
Quoins. Bullnose and 4½ in. Flats	28 10 0		

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	2 0	3 in. per yd. super	2 11
2½ in. "	2 6	4 in. "	3 6

	s. d.	
Thames Ballast	10 6	per yard.
Pit Sand	14 9	" "
Thames Sand	15 6	" "
Best Washed Sand	15 6	" "
½ in. Shingle for Ferro-Concrete	14 0	" "
¾ in. " "	15 0	" "
¾ in. Broken Brick	10 6	" "
Pan Breeze	5 6	"

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement, British Standard Specification Test £2 18 0 to £3 3 6 51/- alongside at Vauxhall in 80-ton lots.	
Ferrocrete per ton extra on above	0 10 0
Super Cement	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" " Fine	5 12 0
Sirapite, Coarse	3 9 6
" Finish	3 17 6
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	2 13 6
Hair	17 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months, carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 11½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do. delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra.	

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

HOPTON-WOOD STONE.

Delivered at any Goods Station, London.

Small random blocks, up to 10 ft. cube. Per ft. cube		7/-
Random blocks from 10 ft. and over	"	17/-
Sawn two sides	"	27/-
Sawn three or four sides	"	32/-

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.

	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per Ft. Super	5 3
6 in. rubbed two sides, ditto "	5 9
3 in. sawn two sides slabs (random sizes) "	2 1½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 5½
1½ in. to 2 in. ditto, ditto "	1 3

HARD YORK—

Delivered at any Goods Station London.

	s. d.
Scappled random blocks Per Ft. Cube	5 6
6 in. sawn two sides landing to sizes (under 40 ft. super.) Per Ft. Super	5 4½
6 in. rubbed two sides ditto "	6 0½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto. ditto "	2 5
2 in. self-faced random flags. Per Yard Super	7 11

ARTIFICIAL STONE.

Delivered in London Area in full van loads.

	s. d.
Plain per ft. cube	6 6
Moulded " "	7 9
Cills " "	8 3

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£34 0	3 × 6	£25 0
4 × 9	34 0	3 × 11	34 0
4 × 8	29 0	2 × 11	34 0
4 × 7	28 0	3 × 9	33 0
3 × 8	26 10	2½ × 9	33 0
3 × 7	26 0	3 × 4½	24 0
2½ × 7	26 0	3 × 4	24 0

WOOD (*Continued*).

PLANED BOARDS.

1 × 11	£38 10	1 × 9	£36 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	21/-	1¼	33/6
¾	23/-	1½	38/6
1	26/6		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.
1	26/6
1¼	33/6
1½	38/6

MATCHINGS (BEST).

Inches	per sq.
¾	17/6
¾	22/-
1	26/-

Inches	BATTENS	s. d.
¾ × 2		2 4 per 100 ft.

SAWN LATHS.

Per bundle			0	2 10
Dry Wainscot Oak, per ft. super, as inch	0 2 0	to	0 2	6
¾ in. do. do.	0 1 6	to	0 2	0
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 1 9	to	0 2	6
Cuba Mahogany	0 3 0	to	0 3	6
Teak (Rangoon, Moulmein or Java), per load	45 0 0	to	50 0	0
American Whitewood planks, per ft. cube	0 14 0	to	0 16	0
Best Scotch Glue, per cwt.	4 10 0	to	—	
Liquid Glue, per cwt.	4 7 0	to	5 10	0

SLATES.

1st quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9	18 12 6
22 by 11	31 5 0	16 by 10	17 12 6
20 by 12	29 15 0	16 by 8	13 15 0
20 by 10	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 7 6
Ditto hand made ditto	5 12 6
Ornamental ditto	5 17 6
Hip and valley tiles (per dozen) Hand made	0 9 6
Hip and valley tiles (per dozen) Machine made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	13 10 0
Plain Compound Girders	15 10 0
Stanchions	17 10 0
In Roof Work "	20 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	16 10 0	⅜ in. to ½ in.	13 10 0
⅛ in.	14 10 0	⅝ in. to 2½ in.	13 0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Gas	52½%	52½%	62½%
Water	47½%	47½%	57½%
Steam	42½%	42½%	52½%
Galv'd—			
Gas	37½%	42½%	52½%
Water	31½%	37½%	47½%
Steam	25 %	32½%	42½%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/1½	11d.	3½d.
3½ in.	1/2½	1/0½	3½d.
4 in.	1/4	1/1½	3½d.
4½ in.	1/5½	1/4	4d.
5 in.	1/7½	1/5½	5d.

O.G. GUTTERS.

3 in.	1/6½	1/2½	3½d.
3½ in.	1/8½	1/2½	3½d.
4 in.	1/7½	1/4	3½d.
4½ in.	1/9½	1/6½	4d.
5 in.	2/1½	1/9	5d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/7½	1/1½	1/8
2½ in. "	1/9½	1/4	2/0½
3 in. "	2/1½	1/8	2/5½
3½ in. "	2/6½	1/11½	2/10½
4 in. "	2/11½	2/4½	3/5½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts plain	3 0½	2 2½	2 8
2½ in. "	3 6½	2 5½	3 3½
3 in. "	4 2½	2 8	4 0½
3½ in. "	4 7	3 3½	4 8½
4 in. "	5 1	3 9½	5 5

L.C.C. COATED DRAIN PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches stock angles. s. d.
3 in. per yd. in 9ft. lengths	4 9	5 8	8 10
4 in. " "	6 3	6 8	11 4
5 in. " "	7 6	11 6	18 2
6 in. " "	8 10	14 4	23 5

Per ton in London.

IRON—	£ s. d.		£ s. d.
Common Bars	13 10 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 0 0	..	15 0 0
Staffordshire "Marked Bars"	17 0 0	..	18 0 0
Mild Steel Bars	12 10 0	..	13 10 0

METALS (*Continued*).

	£ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, basis price	13 0 0	..	14 0 0
Hoop iron, basis price	16 10 0	..	17 10 0
" Galvanised	31 0 0	..	32 0 0
Soft Steel Sheets, Black—Ordinary sizes to 20 g.	15 0 0	..	16 0 0
" " " 24 g.	16 0 0	..	17 0 0
" " " 26 g.	18 0 0	..	19 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality—Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	22 10 0	..	23 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	24 10 0	..	26 10 0
Flat and Galvanised Corrugated Sheets—Ordinary sizes, 6 ft. to 9 ft. to 20 g.	21 10 0	..	22 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	22 0 0	..	23 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	24 0 0	..	25 0 0
Sheets Galvanised Flat, Best quality—Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	23 10 0	..	24 10 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 10 0	..	26 10 0
Best Soft Steel Sheets, 26 g.	26 0 0	..	27 0 0
Cut Nails, 3in. to 6 in. (under 3in. usual trade extras.)	20 10 0	..	22 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1/4 to 1/7 per foot super.

LEAD, &c.

(Delivered in London.)

	£ s. d.
LEAD—Sheet. English, 4 lb. and up	42 10 0
Pipe in coils	48 0 0
Soil Pipe	46 0 0
Compo pipe	48 10 0

NOTE—Country delivery, 30s. per ton extra: lots under 3 cwt., 2s. per cwt. extra and over 3cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	27 0 0	..	—
Do., ex country, carriage forward per ton	28 0 0	..	—

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2in.
7/6	11/6	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F

½ in.	¾ in.	1 in.	1¼ in,	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps	35/-	45/-	66/.	126/.	

COPPER—	£ s. d.		
Strong Sheet per lb.	0 2 3	..	—
Thin "	0 2 4	..	—
Copper nails "	0 2 3	..	—
Copper wire "	0 2 4	..	—
TIN—English Ingots "	0 2 6	..	—
SOLDER—Plumbers' "	0 1 1	..	—
Tinmen's "	0 1 3	..	—
Blowpipe "	0 1 5	..	—

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes per gallon	0 4 0
" " " in barrels "	0 4 2
" " " in drums "	0 4 5
Boiled " " in barrels "	0 4 6
" " " in drums "	0 4 9
Turpentine in barrels "	0 6 11
" in drums (10 gall.) "	0 7 2
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	57 0 0

GENUINE WHITE LEAD PAINT—

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Spedol" and other best brands (in 14 lb. tins) not less than 5 cwt. lots

per ton delivered	81	0	0
Red Lead, Dry (packages extra) per ton	43	0	0
Best Linseed Oil Putty per cwt.	0	16	0
Filocoi per cwt.	0	15	6
Size. XD Quality fkn.	0	3	6

[Concluded on next page.]

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths....	3½d.	32 oz. fourths	8½d.
15 ,, thirds	4½d.	32 ,, thirds	10½d.
21 ,, fourths ..	5d.	Obscured Sheet, 15 oz.	4d.
21 ,, thirds	6½d.	,, ,, 21 ,,	5½d.
26 ,, fourths ..	6d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 ,, thirds	7½d.	En'lled 15oz. 5½d., 21oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

		Per Ft
⅛	Rolled plate	4½d.
⅜	Rough rolled	5½d.
¼	Rough rolled	5½d.
	Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
	Ditto, tinted	9d.
	Rolled Sheet	6d.
	White Rolled Cathedral	5½d.
	Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	2 0 14 0
Fine ditto	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best Ditto	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 0
Best Black Japan		0 12 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 9 0
Berlin Black		0 14 0
Knotting (patent)		1 5 6
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Cuirass Black Enamel		0 7 0

FEBRUARY 11.—**Bathgate.**—HOUSES.—Erection of two groups of new houses (32 three-apartment houses and 20 two-apartment houses) for the Town Council. Contractors can tender for the group of 32 or the group of 20, or for both groups. All applications to be made to Mr. W. Allan, Town Clerk, Bathgate.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND.

Cardonald.—NEW CHURCH.—At the last meeting of the Glasgow United Free Presbytery the Rev. James Muir submitted a report for the Church Extension Committee. He said that plans had been prepared for the new church at Cardonald, which provided seating accommodation for 600, and would cost £8,200.

Dumbarton.—NEW GASWORKS.—The T.C. has resolved to borrow £17,000 towards the cost of the new gasworks and the alterations at Garshake House, the total cost of which will be £133,267. The burgh engineer has received instructions to submit an offer for carrying out the work of altering Garshake House for the use of the Gas Committee and the Public Health Committee.

Kirkconnel. — SCHOOL. — The Dumfriesshire Education Authority proposes to erect a school at Kirkconnel.

Ballachulish.—HOUSES.—The Lorn District Committee of the Argyll C.C. has received a notification from the County Clerk stating that the Standing Joint Committee has given its approval to the District Committee's scheme for the erection of twelve houses at Ballachulish. They also approved of the County Council's proposal to borrow £6,800 towards the cost.

Montrose. — ACADEMY. — The Forfarshire Education Authority has decided to proceed with the erection of a new primary department in connection with Montrose Academy.

Invertiel.—NEW STATION.—It is probable that the L. & N.E. Railway will commence immediately with the erection of a new station at Invertiel, Kirkcaldy. A branch line is also to be laid from Invertiel to the Fife Coal Co.'s new pit at Seafield. It is also stated that the present passenger station at Kirkcaldy is to be brought up to the requirements of the increasing needs of the town.

Hawick.—DOUBLE COTTAGE.—The T.C. has passed plans for a double cottage at Douglas-road East, for Miss Kate Davidson.

Airdrie.—NEW SHOPS.—The Dean of Guild Court granted permission to Mr. Paul Sidonia to erect new shops and saloons at the corner of Graham and Broomknoll-streets.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Brick-layers.	Car-penters, Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Brick-layers' Labourers.	Masons' Plas-terers' Labourers.
Aberdeen	1/7	1/8	1/7	1/8	1/7	1/7	1/4½	1/-	
Airdrie	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Alexandria	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Arbroath	1/7	1/6	1/6	1/7	1/6	1/6	1/5	1/1	
Ayr	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Bathgate	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/1 to 1/2	
Blairgowrie	1/7	—	1/7	1/7	1/7	1/7	1/6½	—	
Bo'ness	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Coatbridge	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Dumbarton	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2	
Dumfries	1/5	1/5	1/5	1/6	1/5	1/6	1/5	1/1 to 1/2	
Dundee	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Dunfermline	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Edinburgh	1/7	1/7	1/7	1/8	1/8	1/7	1/6½	1/2½	
Falkirk	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Fort William	1/7	1/6	1/6	1/7	1/6	1/6	1/6½	1/1½	
Galashiels	1/5	1/5	1/5	1/6	1/5	1/5	1/5½	1/1	
Glasgow	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Greenock	1/7	1/7	1/7	1/8	1/7	1/7	1/5½	1/1 to 1/2½	
Hamilton	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Hawick	1/5	1/5	1/5	1/6	1/5	1/5	1/5½	1/1½	
Helensburgh	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Inverness	1/3½	—	1/3	1/4	1/4½	1/4	1/3½	10d. to 1/2	
Kilmarnock	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Kirkcaldy	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Kirkwall	1/7	1/5	1/3	1/4	1/4	1/4	1/4	1/-	
Lanark	1/7	1/7	1/7	1/8	1/7	1/7	1/5½	1/2½	
Leith	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Motherwell	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Perth	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Stirling	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Stirlingshire (Eastern District)	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	
Wishaw	1/7	1/7	1/7	1/8	1/7	1/7	1/6½	1/2½	

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 193.

Housing in Dundee.

Mr. Robert Mitchell, chief sanitary inspector, Dundee, in his annual report on the housing of the working classes, insanitary buildings, &c., states that the net increase of houses during the past year is only seven. The Corporation schemes provided 16 additional houses and private enterprise 56 separate houses, as against 25 last year. Emigration might ease the situation somewhat this summer, but he would not like it to be the excuse for a pause in building operations.

Housing Progress in Scotland.

THE following figures show the progress that has been made in State-aided housing schemes in Scotland to December 31, 1923:—

Permanent houses completed	20,320
Temporary houses completed	665
Reconstructed houses completed...	101
Houses completed under the Private Subsidy Scheme	2,319
	23,405

There are 2,884 houses at present under construction in connection with housing schemes carried out by Local Authorities and Public Utility Societies.

The total amount paid by the Scottish Board of Health in respect of the 2,319 houses completed under the private subsidy schemes is £549,666 13s. 4d.

Building Trade.

A meeting of representatives of building trade employers' organisations from all the districts in Scotland was held recently in the Shipbuilders' Institute, Glasgow. Mr. James A. Baxter, Glasgow, presided, and the meeting was addressed by Mr. W. H. Nichols, President of the National Federation of Great Britain and Ireland; Mr. Forsdike, ex-President; and Mr. Cox, ex-President of the Institute of Plumbers. The following resolution was unanimously adopted: "This meeting of building trade employers of Scotland having had placed before them the advantages of co-ordination and co-operation for working conditions of national importance agrees to ally themselves through the Scottish Allied Building Trade Committee with the National Allied Building Trade Employers; it requests this committee to proceed with the examination of Scottish working conditions and to report thereon as soon as possible; in addition, it instructs its representatives to oppose strenuously the operatives' present demands for increased wages and alterations in working conditions."

New Lanarkshire School.

The Stane Primary School, Shotts, which was built at an approximate cost of £9,000, was opened recently by Dr. George Macdonald, Secretary of the Scottish Education Department.

Dr. Macdonald, in declaring the school open, said it was not entirely a novelty, but it was sufficiently so to make it worth while drawing attention to its leading features. It belonged to what was technically known as the "pavilion cross-ventilation" variety. Windows on two opposite sides of the class-rooms provided a simple and effective method of securing a free current of air. Its advantages were obvious, and were becoming more and more widely recognised. The school was so laid out that a sunny exposure for every classroom was secured, a matter of first-rate importance alike for the mental and the physical health of the pupils and teachers. The structure was semi-permanent only. It was not built to last for all time, as too many of the older schools were apparently designed to do, and one result of that was that it had been comparatively inexpensive.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	6
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	35	0
Add if in underpinning in short lengths	" "	7	6
Add if in floors 6 in. thick	" "	3	6
Add if in beams	" "	4	0
Add if aggregate 1 : 2: 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	3	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	2	0	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	1
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	9	0
¾ inch on flats in two thicknesses	" "	6	6
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	3

MASON.

York stone templates fixed	per foot cube	12	6	
York stone sills fixed	" "	21	6	
Bath stone and all labour fixed	" "	10	6	
Portland stone fixed	" "	19	6	

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9	
Do. 20 in. × 10 in. Do. Do.	"	80	9	
Do. 24 in. × 12 in. Do. Do.	"	90	0	

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	3	
Do. joists	" "	5	9	
Do. roofs, floors and partitions	" "	6	3	
Do. trusses	" "	8	3	

		¾"	1"	1½"	2"
Deal rough close boarding	per sq.	38/-	44/-	50/-	80/-

Flat centering for concrete floor, including struts or hangers	"	50	0	
Do. to beams	per ft. sup.	1	0	
Centres for arches	"	1	6	
Gutter boards and bearers	"	1	0	

FLOORING.		¾"	1"	1½"	1½"
Deal-edges shot	per sq.		49/-	58/-	67/-
Do. tongued and grooved	"		54/-	65/-	72/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	4
Deal-cased frames with 1 in inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup	2/1	2/4	2/6
Four-panel Do	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup	1/8	1/9	2/0
Deal shelves and bearers	"	1/5	1/7	1/10
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	17	0
Plain compound girders	"	20	0
Do. stanchions	"	23	0
In roof work	"	28	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	54	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	6	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	11d.	1/8	1/11	3/5	4/2	
Do. service	"	1/7	2/1	2/6	3/10		
Do. soil	"						6/10
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"				14/7	19/6	
Bib cocks and joints	"	6/4	9/7	15/4	41/-		
Stop cocks and joints	"	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	3
Do. Do. Sirapite	" "	2	6
Do. Do. Keen's	" "	3	6
Add sawn lathing	" "	1	5
Add metal lathing	" "	2	3
Portland cement screed	" "	1	10
Do. plain face	" "	3	0
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	9
26 oz. Do.	" "	1	1
Obscured sheet	" "	1	3
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	11
¼ in. wired cast plate	" "	1	5

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup	0	9
Knotting and priming	" "	0	7
Plain painting 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece	2/- to 4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10 % on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS.

(Continued from p. 200.)

adequate public and private wards, an operating theatre, X-ray department, and all that goes to equip such an institution upon the most modern lines. The cost of the scheme is £13,000, towards which £4,500 has been raised, whilst a suitable site two acres in extent has been secured.

THORNHILL.—The Cumberland County architect has submitted to a sub-committee preliminary plans for the provision of a new school at Thornhill at an estimated cost of £16,000.

TORQUAY.—At a meeting of the parishioners of St. Marychurch, plans were accepted for a parish hall to be erected at an estimated cost of £4,000.

TURTON.—The plans were approved for 16 houses in Turton-road, for Mr. Edward Lomax.

TYNEMOUTH.—Plans passed by T.C.: Open-air school, Lovaine House; five houses, Bamborough-terrace and Blanchland-terrace, by Messrs. F. R. N. Haswell & Son, for Messrs. Brannen Bros.; semi-detached houses, Kingsway, Kenners Dene, by Mr. A. K. Tasker, for Mr. H. D. Burton.

UNSWORTH.—It was decided to write to the Bury R.D.C. asking for the erection of three public conveniences.

UFFINGTON.—The surveyor to the Uffington R.D.C. has been instructed to prepare plans and obtain estimates for the construction of a new bridge at Wilsthorpe, in the meantime the surveyor is to take steps to ensure the safety of the existing bridge.

WALTHAMSTOW.—Plans passed by U.D.C.:—Shop and house, 190, Wood-street, E.J. Good; pumice store, British Xylonite Works, A. G. Barton; two houses, 23 and 25, Bromley-road, West Bros. & Pettit; dairy and covered yard, St. Mary's-road, A. G. Barton.

WANDSWORTH.—Plans passed by B.C.: Mr. F. G. Minter, gantry and store at Ferry Works, Lacy-road, Putney; Messrs. Geo. Slade & Co., Ltd., two houses, Mount Nod-road, Streatham; Mr. W. E. Silk, house, Chartfield-avenue, Putney; Messrs. W. H. Lorden & Son, Ltd., additions to warehouses and drains at the Columbia Graphaphone Co.'s premises, Bendon Valley, Springfield; Messrs. H. Somerford & Son, additions to the Westminster Bank, Ltd., 432, Streatham High-road; Messrs. G. Giles & Co., additions to Messrs. Ault & Wiborg's premises, Standen-road, Southfield; Mr. F. Waterman, for conversion into shops of 176, Upper Richmond-road, Putney; Messrs. Belfrage, Saville & Hooper, 12 houses, Sutherland-grove, Southfield; Messrs. Chapple & Fulford, eight houses in Woodfield-avenue and one in Woodfield-grove, Streatham; Mr. G. L. Elkington, 52 houses on Southfields Housing Estate, Southfield; Mr. W. F. Goodchild, six houses, Beechcroft-road, Balham; Messrs. Peacock Bros., sports pavilion, 79, West Hill; Messrs. H. Dakin & Co., Ltd., house, Genoa-avenue, Putney; Mr. G. S. Greasby, addition, 211, Longley-road, Tooting; Messrs. Wm. Akers & Co., Ltd., addition at school building at Huntingfield-road Council school, Putney; Messrs. J. Bell, Gripper and E. H. Wilkins, eight houses in Gateside-road, Balham; The Phœnix Construction Co., house, Keswick-road, Southfied; Mr. E. J. Logan, four shops in Wimbledon Park-road, Southfield; Messrs. H. Dakin & Co., Ltd., addition to the Putney High School for Girls, 35, Putney hill; Messrs. Holloway Bros. (London), Ltd., four houses, Herondale-avenue, Springfield; Messrs. Limpus & Son, house and garage, Howard's-lane; Messrs. Bridge & Co., house, Melrose-road; Messrs. Holloway Bros. (London), Ltd., Institute for Deaf and Dumb, Clapham-road, Clapham North; Messrs. F. & H. F. Higgs, Ltd., class-rooms at Down Lodge Hall, West Hill, Southfield; Messrs. Earle & Co., additions to Scio House, Old Portsmouth-road; Mr. Wm. Hussey, alterations to laundry at Grove Hospital, Grove-road, Tooting; Messrs. Croggon & Co., Ltd., store at premises of Messrs. J. Thorley, Ltd., Point Pleasant; Mr. G. Barker, rebuilding of "Coach and Horses" beerhouse, 173–175, Clapham Park-road; Wandsworth B.C., public library, Magdalen-road, Springfield.

WEST HAM.—The proposed provision of a new sanitary underground convenience for Forest Gate, by the B.C., at a cost of over £6,000, has been the subject of a local inquiry by the M.H.

WEST LANCASHIRE.—Plans passed by R.D.C.: Brick bungalow, Liverpool-road, Rufford; pair of villas, Segras-lane, Halsall; house, Aughton; pair of bunalows, Heathey-lane; and two pairs of detached villgas in Brookfield-lane, Aughton.

WHITEFIELD.—The Council are proposing to erect tram shelters, waiting rooms, &c., at the terminus near "Derby Arms."

WHITLEY AND MONKSEATON.—Mr. F. Gregson Williams, A.M.Inst.C.E., on behalf of the M.H., has held an inquiry respecting the application of the U.D.C. for sanction to borrow £6,300 for private street improvements.

WIGAN.—Mr. T. Broxton, builder, is proposing to erect six houses in Broxton-avenue.

WORKSOP.—Plans for 28 houses for the Shirebrook Colliery Co., and 16 houses in Gateford-road, Worksop, for Messrs. Roper & Sons, of Sheffield, have been approved by the U.D.C.

Fires.

ABERDEEN.—Damage estimated to amount to about £10,000 was caused by a fire which completely destroyed the mill in Cotton-street, Aberdeen, belonging to Messrs. Gorrod, Davie, Kemp, Walker & Co., grain merchants.

BURTON-ON-TRENT.—A large amount of damage has been caused by fire to the Black Cat Billiard Hall and warehouses belonging to Messrs. Bridges and Messrs. Johnson Bros.

ROCHDALE.—Damage to the extent of £40,000 was caused by a fire at the Co-operative Wholesale Society's paint, varnish, and colour works, in Weir-street, Rochdale. The main building, holding big stocks of paints, oil and varnish, was gutted. Other departments were saved.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ABERDEEN.—For construction of sewer on North Esplanade, for the T.C. Mr. J. Gordon, Borough Surveyor, Town Hall, Aberdeen:—

*Wm. Tawse, Torry	£11,899 10

ABERDEEN.—For erection of 4 blocks of dwellings, each containing 48 tenements, granite construction, for the T.C. Mr. J. Coutts, architect, Town House, Aberdeen. Messrs. James Barr & Son, quantity surveyors, 221, West George-street, Glasgow:—

Mason work—	
*Joseph Shirras & Son, Aberdeen	£9,358 2 7
Carpenter work—	
*John Bisset & Sons, Ltd., Aberdeen	4,987 0 0
Slater work—	
*James Harper & Son, Aberdeen	1,000 18 6
Plumber work—	
*J. J. Johnstone, Aberdeen	2,005 0 0
Plaster work—	
*Robert Moir, Aberdeen	1,498 0 0
Electric work—	
*Andrew McRobb, Aberdeen	260 0 0
Painter work—	
*James S. McLaren, Aberdeen	670 0 0

BRADFORD.—For erection of new garages and showrooms at Keighley-road, Frizinghall, near Bradford, for Mr. Holroyd, of the Alfresco Autodrome. Messrs. Wm. Illingworth & Son, Architects, Bradford:—

Main Contract—
Michael Booth & Sons, Bradford.

Plasterer and Concretor—
M. W. Howroyd & Co., Bradford.

BRISTOL.—For Avonmouth Dock extension, for the Docks Committee:—

*Sir William Arrol & Co	£554,000

BURY ST. EDMUNDS.—For erection of 4 houses in Muslow-street, for the T.C. Mr. R. H. Beaumont, Borough Surveyor, Town Hall, Bury St. Edmunds:—

Hinnels & Son, Ltd., Bury St. Edmunds	£2,220
S. Haylock, Bury St. Edmunds	1,756
A. R. Plummer, Bury St. Edmunds	1,716
*H. F. Sewell, Bury St. Edmunds	1,700

CARSHALTON.—For erection of 28 cottages in 12 blocks, and 8 flats in 2 blocks, for the U.D.C. Mr. W. W. Gale, Architect, Council Offices, Carshalton:—

E. G. Bean, Wallington (for two blocks, flats and 14 cottages)	£8,987 2
Perry Bros., Ealing	17,627 0
Cropley Bros., Epsom	15,732 0
G. Greenwood & Sons, London	15,413 0
Turnbull & Son, London	15,000 0
Burnand & Pickett, Wallington	14,879 0
*Smith & Moreton, Norwood	14,357 1

DOVER. — For Brookfield-avenue improvement works, for the T.C.:—

Chittenden & Simmons, Maidstone	£1,315 13 10
Gunn MacNeill, Ltd., London	1,198 10 0
*G. Lewis & Sons (Dover), Ltd.	1,139 0 0

EAST ELLOE.—For erection of 5 pairs of cottages in Whaplode Village; 2 pairs in Gedney Fen; 2 pairs in Sutton St. James, for the R.D.C. The Surveyor, Council Offices, West End, Holbeach:—

Sutton St. James (2 *pairs*)—	
Mr. J. W. Davis, Tydd St. Mary	£1,650
Gedney Fen (2 *pairs*)—	
Mr. C. H. Cruise, Holbeach	1,608
Whaplode Village (5 *pairs*)—	
Mr. C. H. Cruise, Holbeach	3,730

ENFIELD.—For construction of 148 yds. of granite concrete tube sewer, Church-street, for U.D.C. Mr. H. R. Crabb, Surveyor, Public Offices, Enfield:—

*Wheeler & Co., London.	

ENFIELD.—For construction of 1,500 yds. run of stoneware pipe sewer, &c., at Botany Bay, for the U.D.C. Mr. H. R. Crabb, Surveyor, Public Offices, Enfield:—

T. W. Pedrette, Bush Hill Park.

ENFIELD.—For construction of 9 in. stoneware pipe surface water drain, Mandeville-road, for the U.D.C. Mr. H. R. Crabb, Surveyor, Public Offices, Enfield:—

W. & C. French, Buckhurst Hill.

FALMOUTH.—For laying 4,340 ft. of 21 in. concrete tubes, &c., construction of tank, &c., and cast-iron sea outfall, for the T.C. Mr. G. Midgley Taylor, 36, Victoria-street, S.W. 1:—

An. Coles & Sons, Ltd., Plymouth	£49,909
Nott Brodie & Co., Ltd., Bristol	37,400
W. E. Bennett, Bodmin	36,049
Fothergill Bros., Ltd., Exeter	30,676
Carkeek & Sons, Redruth	28,966
D. T. Jackson, Barking	26,359
E. Thomas, Falmouth	25,432
John Cochrane & Sons, Westminster	23,167
British Construction Co., Westminster	22,212
*G. Shellabear & Son, Plymouth	21,723

GLASGOW.—For the electric lighting installation to 52 houses at Kelvindale, for the T.C.:—

*R. J. Sinclair	£272 9 4

GLASGOW.—For construction of roads and sewers at Merryflats Housing Scheme, for the T.C.:—

*Crowley, Russell & Co	£7,578 9 3

GLASGOW.—Supply of 80 tons of 3 in. to 4 in. cast-iron pipes to Water Committee of the T.C.:—

*Macfarlane, Strang & Co	£900 1

GLASGOW.—For carrying out additions at Phœnix Park Kindergarten, for the T.C.:—

*J. Morrison & Sons	£194 10

GLASGOW.—For the erection of 204 houses at Scotstoun, for the T.C.:—

*Elphinstone Forrest, *mason and brick work*	£32,559 16 0
*George Brown, *carpenter work*	19,220 5 2
*Thomas Porter & Son, *plumber work*	13,027 17 8
*William Reid & Sons, *slater work*	3,585 0 6
*H. S. Bathgate, *plaster work*	4,862 8 6
*John Wilson, *glazier work*	489 15 0
*Peter M'Kerracher & Sons, *painter work*	1,599 16 8

GLASGOW.—For erection of new buildings at corner of Trongate and High-street, for the T.C.:—

*John Baxter & Sons, *wright, &c., work*	£4,830 7 1
*H. Twaddle & Sons, *plumber and gasfitter work*	1,055 10 0
*Limmer & Trinidad Co., *asphalt work*	251 12 1
*G. & R. Wemyss, *plaster work*	926 17 9
*John Youden & Sons, Ltd., *tile work*	242 2 10
*George G. Kirk, Ltd., *glazier work*	494 0 0
*Frederick Braby & Co., Ltd., *steel windows*	1,094 9 6
*H. L. Anderson & Co., *painter work*	629 0 0
*James Combe & Co., Ltd., heating installation	1,287 6 0
*Johnston, Park & Co., *electric light and bells installation*	892 9 3

HALIFAX.—For erection of bungalow at Rothwell Mount. Messrs. C. F. L. Horsfall & Son, architects, Lord-street Chambers, Halifax. Quantities by architects:—

Mason—Thos. Pickles, Halifax.
Joiner—J. Turner & Sons, Halifax.
Plumber—J. Boocock & Sons, Halifax.
Plasterer and Slater—Rushworth & Firth, Halifax.
Asphalters—Turnstalls & Co., Leeds.

HARROGATE.—For supply of fencing, for Central Depot, to the T.C.:—

*W. Gratrix & Sons, Walkden	£289 10

HAVERFORDWEST.—For erection of residence at Portfield, for Mr. W. H. George. Messrs. Sir Hugh Thomas & Ingleton, architects and surveyors, 11, Victoria-place, Haverfordwest:—

James John, Haverfordwest	£1,714 6 0
Thomas Bros., Templeton	1,500 0 0
T. Harris & Son, Nayland	1,550 0 0
J. Davies & Son, Haverfordwest	1,479 0 0
W. H. Fortune, Haverfordwest	1,465 14 6
James Lee & Sons, Nolton Haven	1,450 0 0
John Jones, Haverfordwest	1,385 0 0
John James, Haverfordwest	1,372 0 0
(*a*)Absalom & Davies, Haverfordwest	1,340 0 0
*W. Austin Elkington, Ltd., Haverfordwest	1,129 15 0

(*a*) Excluding carriage drive.

HERTFORD.—For laying about 1,100 lineal yds. of sewers, for the T.C. Mr. S. M. Senior, Borough Surveyor and Engineer, the Corporation of Hereford:—

Thos. Muirhead & Co., Ltd., Westminster	£5,393 10 4
Percy Trentham, Ltd., London	3,650 0 0
Chas. Ball, Letchworth	3,382 12 3
Gunn Macneill, Ltd., Westminster	3,337 14 10
W. & C. French, Buckhurst Hill	3,275 8 10
London & County Public Works, Ltd., London	3,265 14 9
George Bell & Sons, Ltd., Tottenham	3,189 11 0
*A. E. Farr, London	2,718 12 0

HULL.—For erection of 50 blocks of parlour-three-bedroom type houses in blocks of two, four and six, for the T.C.:—

*I. H. Wilburn, Ltd.	

H.M. OFFICE OF WORKS.—(Accepted during December): *Building Works*: Aberdare P.O., &c.—Erection: Dawkins, Harris & Weaver, Ltd., Chepstow. Aldeburgh, Repeater Station—Erection: F. R. Hipperson, Norwich. Bishopsgate Telephone Exchange—Erection: Chessums, Ltd., London, N. Granite Work: Brookes, Ltd., London, S.W. Steelwork: Archibald D. Dawnay & Sons, Ltd., London, S.W. Buckingham Palace—Reconditioning forecourt and quadrangle: John Mowlem & Co., Ltd., London, S.W. Coventry Head P.O.—Alterations, &c.: E. Crowder, Birmingham. Didsbury Telephone Exchange—Precast Concrete Work: The Christie Patent Stone Co., Ltd., Manchester. Dollis Hill P.O. Research Station—Erection of garage, &c.: Winter & Ward, Harpenden. Edgware-road Employment Exchange—Asphalter: Engert & Rolfe, Ltd., London, E. Steelwork: Measures Bros., Ltd., London, S.E. Gosforth Telephone Exchange—Erection: Stephen Buy, Newcastle-on-Tyne. Hackney, Mare-street Employment Exchange—Erection: Winter & Ward, Harpenden. Hammersmith Sorting Office—Joinery: B. W. Blundell & Co., London, N. Headingley P.O., &c.—Erection: Wm.

Irwin & Co., Ltd., Leeds. Higher Broughton Telephone Exchange—Sundry Works: John Bland & Son, Ltd., Salford. Plasterer: J. Broomhead & Sons, Ltd., Manchester. Plumber: J. Ballantyne & Co., Manchester. Liverpool Anthrax Disinfecting Station—Fixing Corrugated Iron: George Lowe & Sons, Liverpool. Maintenance Work—Bexhill District: James Bodle, Ltd., Bexhill. Carmarthen District: E. A. Rogers, Carmarthen. Chesterfield District: P. & W. Anderson, Ltd., Chesterfield. Colchester District: T. J. Ward, Colchester. Crewe District: J. Williams & Sons, Crewe. Douglas (I. of M.) District: James K. Brearley, Douglas. Dudley and Tipton District: J. Edwards & Sons, Dudley. Edinburgh District—Carpenter, Excavator, &c.: Colin Macandrew, Ltd., Edinburgh. Glazier and Slater: Robert Graham, Edinburgh. Ironfounder, &c.: P. Bell & Son, Edinburgh. Painter, &c.: W. A. Campbell & Sons, Edinburgh. Plasterer: John Ross, Edinburgh. Plumber, &c.: W. Barton & Sons, Edinburgh. Glasgow District—Carpenter, &c.: W. McCall & Sons, Glasgow. Excavator, &c.: Wm. Shaw & Son, Ltd., Glasgow. Glazier: Wm. Purdon & Son, Glasgow. Ironfounder, &c.: James McDougall & Sons, Glasgow. Painter, &c.: Logan & Gray, Glasgow. Plasterer and Slater: J. Smith & Son, Glasgow. Plumber, &c.: H. Twaddle & Co., Glasgow. Grimsby District: Joseph Borrell, Grimsby. Guildford District: T. Swayne & Son, Guildford. Hereford District: Wilks, Son & Peake, Hereford. Leamington District: The Exors. of the late R. Bowen, Leamington. Lydney District: F. N. Wright, Lydney. Maidstone District: Barden & Head, Maidstone. North Shields District: Gilbert Park & Son, Ltd., North Shields. Rochdale District: W. H. Ashworth & Son, Rochdale. Warwick District: J. Dean & Son, Warwick. Wigan District—Painting: John Lea & Son, Wigan. North Telephone Exchange—Steelwork: Drew-Bear, Perks & Co., Ltd., London, S.W. Oxford Head P.O., &c.—Asphalter: Engert & Rolfe, Ltd., London, E. Radcliffe Telephone Exchange—Alteration, &c.: Fearnley & Sons, Ltd., Salford. Rugby P.O. Wireless Station—Erection: Chessums, Ltd., London, N. Shrewsbury Telephone Exchange—Alterations, &c.: Wm. Bowers & Co., Hereford. Swansea Head P.O.—Extension of Public Office: Dawkins, Harris & Weaver, Ltd., Chepstow. Steelwork: Archibald D. Dawnay & Sons, Ltd., London, S.W. Threadneedle-street Branch P.O.—Granite Work: Fenning & Co., Ltd., London, W. Tilbury Telephone Exchange—Erection: William F. Blay, Ltd., Dartford. Asphalter: The Ragusa Asphalte Paving Co., Ltd., London, W. Steelwork: J. Westwood & Co., Ltd., London, E. Stonework: The Metropolitan Stone Co., Ltd., London, S.W. Warlingham Telephone Exchange—Erection: J. A. Pettit & Co., Warlingham. Whitley Bay P.O.—Concrete Steps, &c.: J. T. Dove, Ltd., Newcastle-on-Tyne;

HOLYHEAD.—For erection of ministers' residence, Porthyfelin-road, for the Trustees of Hyfrydle C.M. Chapel. Mr. T. E. Thomas, architect, Central Chambers, Holyhead:—

Pritchard & Williams, Holyhead	£2,018
D. J. Jones, Holyhead	1,842
O. R. Jones, Holyhead	1,828
*John Hughes, Holyhead	1,684

HULL.—For the erection of 50 blocks of houses, for the T.C.:—

*T. H. Wilburn, Ltd.—For eleven blocks at an average price of £404 6s. 8d. per house.
*City Engineer—For 39 blocks at an average price of £434 per house.

KNOTTINGLEY.—For repairs to Holes School House, for the Education Authority:—
Messrs. Bramham & Sons, Brotherton.

LEEDS.—For the internal reconstruction of Messrs Marshall's Successors, Ltd., Bond-street, Basinghall-street, and Park-row, Leeds:—

Brickwork—*Wm. Gott & Sons, Leeds.
Steelwork—*Samuel Butler & Co., Ltd., Stanningley, near Leeds.
Asphalter—*Tunstall's Rock Asphalte Co., Ltd., Leeds.

LITTLEHAMPTON.—For erection of fire station in Maltravers-road, for the U.D.C. Mr. L. G. Dashper, Surveyor, Town Offices, Littlehampton:—

W. White & Sons, Littlehampton	£1,320
Linfield & Sons, Littlehampton	1,157
†Percival Coope, Midhurst	958

LONDON.—For repairs to hutments for the Hammersmith B.C.:—

*G. F. Rice £122 10

LONDON.—For carrying out 4½ in. asphaltic macadam works in part of Blythe-road, for the Hammersmith B.C.:—

*Limmer and Trinidad Lake Asphalt Co., Ltd. £3,635 3 2

LONDON.—For re-surfacing with 4 in. tarred slag macadam, Olaf-street, Boxmoor-street, Hammersmith-terrace, Maclise-road, Hazlitt-road, Chapel-street and Marryat-street, for the Hammersmith B.C.:—

*Tarmac, Ltd. £4,500 13 6

LONDON.—Provision of lengths of 9 in., 16 in., 20 in., 24 in. and 30 in. steel tubes and breeches pieces required in connection with the alterations at the Oxford-circus tube station, for the Metropolitan Water Board:—

*Thomas Piggott & Co., Ltd. £1,510

LONDON.—For supply of materials to the St. Pancras B.C.:—

York Paving and Artificial Paving Slabs.
*Brooks & Brooks Quarries, Ltd.:—
For 2½ in. York paving, at 17s. 3d. per square yard.
For 2½ in. York paving to any given dimensions, not exceeding 30 in. by 48 in., at 17s. 3d. per square yard.
*The Patent Victoria Stone Co., Ltd.:—
For 2 in. new artificial paving slabs (indurated), at 6s. 3d. per square yard.

Granite Kerbs, Broken Granite, &c.

John Mowlem & Co., Ltd.:—
For 6 in. by 12 in. Guernsey straight-edged kerb, at 3s. 6d. per lineal foot.
For 6 in. by 12 in. Guernsey circular-edged kerb, at 4s. 3d. per lineal foot.
For 12 in. by 8 in. Guernsey flat circular kerb, at 4s. 8d. per lineal foot.
For 6 in. by 12 in. Norwegian granite straight-edged kerb, at 2s. 9d. per lineal foot.
For 6 in. by 12 in. Norwegian granite circular-edged kerb, at 3s. 6d. per lineal foot.
For Guernsey granite angle blocks, 24 in. radius, at 25s. each.
For broken Guernsey granite, 2 in. ring, at 28s. 6d. per cubic yard.
For broken Guernsey granite, 1 in. ring, at 27s. 6d. per cubic yard.
For Guernsey granite siftings, ¾ in. mesh, at 23s. 6d. per cubic yard.
For Guernsey granite siftings, ½ in. mesh, at 23s. 6d. per cubic yard.

Gravel and Roadway Materials.

D. Mylon & Co.:—
For loam or hoggin, at 12s. 6d. cubic yard.
For clean rough gravel, at 10s. cubic yard.
For river sand, at 12s. 9d. cubic yard.
For sifted pit sand, at 11s. 3d. cubic yard.
For sifted pit sand specially selected and washed, at 12s. 3d. cubic yard.
For fine river ballast, ¾ in. mesh, at 11s. 4d. cubic yard.
For fine river ballast, ½ in. mesh, at 12s. cubic yard.
For pit flints, at 10s. 9d. cubic yard.
For clean hard sifted shingle, ½ in. mesh, at 13s. cubic yard.
For clean hard sifted shingle, ¾ in. mesh, at 13s. 6d. cubic yard.

Lime and Cement.

Lawford & Sons, Ltd.:—
For blue lias lime (ground), at 39s. 3d. per ton.
For blue lias lime (lump), at 39s. 3d. per ton.
Young & Son, Ltd.:—
For grey stone lime (lump), at 46s. 6d. per ton.
John Knowles & Co., Ltd.:—
For Stourbridge fire clay (ground), at 32s. 9d. per ton.
Young & Son, Ltd.:—
For Portland cement, at 49s. 8d. per ton in barge loads at Blackfriars Wharf, and will unload and cart to any part of the Borough for 3s. 3d. per ton.

LONDON.—For carrying out 1½ in. compressed asphalte works in Waterloo-street, for the Hammersmith B.C.:—

*French Asphalte Co., Ltd. £1,388

LONDON.—The Education Committee of the L.C.C. has accepted the following tenders for cleaning and/or painting of schools:—

Contractor, school and electoral division.

T. W. Heath, Ltd.—Beaufort House, (Fulham, E.)	£960 0 0
H. Groves & Son—Bostall-lane (Woolwich, E.)	1,164 15 0
J. Scott Fenn—Choumert-road (Peckham)	1,153 10 0
W. J. Dixon & Son—Clyde-street (Deptford)	1,990 0 0
J. Scott Fenn—Comber-grove (Camberwell, N.W.)	924 16 0
G. Butters—Culloden-street (Poplar, S.)	1,281 0 0
Douglass, Halse & Co., Ltd.—Deansfield-road Elementary and Eltham County Secondary (Woolwich, W.)	1,563 0 0
F. Cottrell, Ltd.—Eleanor-road (Hackney, C.)	1,188 0 0
G. Hill & Son, Ltd.—Ensham, The (Balham and Tooting)	1,261 0 0
F. Foxley & Co., Ltd.—Essendine-road (Paddington, N.)	1,804 0 0
Sims & Russell—Exmouth-street (St. Pancras, S.W.)	1,110 0 0
A. Logan—Faunce-street (Southwark, C.)	723 11 10
Douglass, Halse & Co., Ltd.—Gordon, The (Woolwich, W.)	2,181 0 0
J. Scott Fenn—Grove-vale (Dulwich)	967 15 0
R. S. Ronald—Honeywell-road (Battersea S.)	1,675 0 0
Castle Bros., Ltd.—John Ruskin, The (Southwark, C.)	1,125 0 0
Hooper & Hooper—Gifford-street (Islington, W.)	1,407 0 0
W. Bailey—Kilmorie-road (Lewisham W.)	1,267 0 0
A. & F. Polden—Lancaster-road (Kensington, N.)	1,188 0 0
J. C. Mather—Laycock-street (Islington, S.)	1,000 0 0
J. Garrett & Son—New Park-road (Clapham)	1,321 0 0
J. Garrett & Son—Plough-road (Battersea S.)	1,264 0 0
W. M. Brand—Princess May-road (Stoke Newington)	1,514 0 0
E. A. Roome & Co., Ltd.—Queen's-road (Hackney, C.)	1,507 0 0
T. Brown & Son—Rosendale-road Elementary, and Turney-road P.D. (Norwood)	1,099 0 0
Bridge & Co.—Sussex-road (Norwood)	1,564 0 0
Stevens & Sons—Upper Hornsey-road, (Islington, N.)	1,969 0 0
Stevens & Sons—Vernon-square (Finsbury)	1,582 0 0
R. Woollaston & Co.—Russia-lane Cleansing Station (Bethnal Green, N.E.)	75 14 0
R. Woollaston & Co.—Glengall-road (Poplar, S.)	330 4 0
W. J. Clemens—L.C.C. Shoreditch Technical Institute (Shoreditch)	152 18 6
J. C. Mather—Pentonville-road place of detention (Finsbury)	£174 0 0
A. H. Inns, Ltd.—Chisenhale-road (Bethnal Green, N.E.), exterior painting	297 0 0
J. Scott Fenn—Chisenhale-road (Bethnal Green, N.E.), interior cleaning	394 18 0
F. Cousins—Grafton-road (Islington, N.), exterior painting	191 12 6
F. Cousins—Grafton-road (Islington, N.), interior cleaning	464 1 6
G. Hill & Son, Ltd.—Merton-road (Putney), exterior painting	661 0 0
Triggs & Co.—Merton-road (Putney), interior cleaning	645 0 0
W. T. Lawrence—Princess-road (St. Pancras, S.W.), exterior painting	638 17 6
Bovis, Ltd.—Princess-road (St. Pancras, S.W.), interior cleaning	801 0 0
White & Johnson—Ranelagh-road (St. George's, Westminster), exterior painting	265 0 0
Triggs & Co.—Ranelagh-road (St. George's, Westminster), interior cleaning	425 0 0
A. Black & Son—The Redriff (Rotherhithe)	331 0 0
Edwards Construction Co., Ltd.—Royal Hill (Greenwich)	359 7 6
E. C. Sames & Co.—Scawfell-street (Shoreditch)	420 12 0
J. C. Mather—Sebbon-street (Islington, S.)	313 0 0
C. P. Kitchen & Co.—Virginia-road (Bethnal Green, S.W.)	233 13 0
W. J. Clemens—Wolverley-street (Bethnal Green, S.W.)	325 10 0
W. Bailey—The Redriff (Rotherhithe)	276 0 0
J. H. Sutch & Sons—The Royal Hill (Greenwich)	378 0 0
Lister & Co. (Builders), Ltd.—Scawfell-street (Shoreditch)	851 12 0
John C. Mather—Sebbon-street (Islington, S.)	724 0 0
R. Woollaston & Co.—Virginia-road (Bethnal Green, S.W.)	314 0 0
Stoneley & Co.—Wolverley-street (Bethnal Green, S.W.)	651 5 0
Wm. Simms—Bromley Hall-road, P.D. (Poplar, S.)	110 7 8
Hensun & Co.—Barnsbury Central (Islington, S.)	305 0 0
C. Berger—Bell-street (St. Marylebone)	567 7 0
W. J. Dixon & Son—Beresford-street (Southwark, C.)	592 0 0
A. G. Barton—Berger-road (Hackney, S.)	521 0 0
A. & F. Polden—Broomsleigh-street (Hampstead)	735 0 0
J. H. Sutch & Sons—Calvert-road (Greenwich)	380 19 0
E. C. Sames & Co.—The Chaucer (Southwark, C.)	817 18 6
Bridge & Co.—Church-street (Kennington)	340 0 0
J. P. Williams, Ltd.—Cromer-street (St. Pancras, S.E.)	310 0 0
G. Hill & Son, Ltd.—Denmark-hill (Camberwell, N.W.)	628 0 0
A. Black & Son—Dulwich Hamlet (Dulwich)	456 0 0
W. J. Dixon & Son—East-lane (Rotherhithe)	597 0 0
S. N. Soole & Son, Ltd.—Garratt-lane (Wandsworth, C.)	655 0 0
S. N. Soole & Son, Ltd.—Gideon-road (Battersea, S.)	524 0 0
F. Cousins—Gillespie-road (Islington, E.)	435 10 0
Falkus Bros.—Hague-street (Bethnal Green, S.W.)	442 10 0
T. Carr—The Hermitage (Whitechapel and St. George's)	199 18 10
A. Black & Son—Hither-green (Lewisham, E.)	806 0 0
J. Hocking & Co.—Hughes-fields (Greenwich)	407 0 0
F. Cottrell, Ltd.—Hugh Myddelton (J.M.) (Finsbury)	382 0 0
A. & F. Polden—King-street (St. Pancras, S.E.)	875 0 0
T. Brown & Son—Lomond-grove (Camberwell, N.W.)	740 0 0
W. M. Brand—Northey-street (Limehouse)	450 10 0
F. Stevens—Rosebery-avenue (Holborn)	478 16 0
J. Garrett & Son—St. Andrew's-street, (Clapham)	903 0 0
A. G. Barton—The Shacklewell (Hackney, N.)	511 0 0
S. Blow, Ltd.—Swan-street (City of London)	300 0 0
Ward, Saul & Co.—Weston-street (Southwark, C.)	580 0 0

LUTON.—For supply of 442 yards of 18 in. reinforced concrete pipes, to the T.C.:—

*Stanton Iron Co. £291 15 6

MARKINCH.—For erection of six houses, for the Burgh. Mr. A. D. Haxton, architect, Leven:—

P. M. Henderson, Markinch—*Builder.*
R. Wood, Thornton—*Joiner.*
D. Ritchie, Markinch—*Plumber.*
A. Mitchell, Markinch—*Plasterer.*
A. Mitchell, Markinch—*Slater.*
J. Haxton & Co., Kirkcaldy—*Glaziers.*
J. C. Rolland & Son, Markinch—*Painters.*
R. Wood, Thornton—*Fencer.*
J. & R. Lister, Leven—*Nurserymen.*

PORTSMOUTH.—For rebuilding of "King George V" B.H., for Portsmouth United Breweries, Ltd. Messrs. A. E. Cogswell & Sons, architects, Prudential Buildings, Portsmouth:—

L. Hoad	£2,659
John Lay & Co.	2,549
S. Salter	2,497
*Corke & Co.	2,383

STAINFORTH.—For erection of an elementary school, for the Educational Authority of the West Riding C.C. :—
Mason work and Concretor—
*T. Jenkinson & Sons, Doncaster.
Joiner and Carpenter—
A. Gregory & Sons, Ltd., Castleford.

STOCKPORT.—For steelwork and roof trusses, for Messrs. Henry Simons' new works :—
*Lambourne & Co., Openshaw..... £30,000

SWINTON.—For construction of earthenware pipe sewer and surface water drain, and works at housing site, for the U.D.C. Mr. H. Birks, Engineer and Surveyor, Council Offices, Swinton :—

Tugby & Sons, Swinton.....	£1,479	0	0
Pennington & Co., Bowdon....	991	9	6
Smith & Hunter, Scunthorpe..	816	0	0
G. H. Smith & Sons, Mexborough	766	14	4
Lockwood & Worrall, Swinton..	754	13	0
Swift Bros. & Haslam, Doncaster	733	4	0
*G. W. Meanley & Sons, Mexborough	692	18	2
A. Storey, Hexthorpe	666	0	0
Dole & Lund, Highgate.....	540	9	10

TIPTON.—For erection of boundary wall, fencing and forming paths, &c., at land adjoining cemetery, for the U.D.C. Mr. W. H. Jukes, Surveyor, Public Offices, Tipton :—

*A. J. Crump, Dudley	£330
Surveyor's estimate	400

TIPTON.—For sewerage, road widenings and improvements, new roads, sewers and other work, for the U.D.C. Mr. W. H. Jukes, Surveyor, Public Offices, Tipton :—

C. Jackson, Tipton	£8,524	17	1
Surveyor's estimate	9,202	4	7

TONG.—For extensions to the Tong and Dudley Hill W.M.C. at Shirley-road. Mr. A. T. Verity, Architect, Birkenshaw :—
Mason—C. Ward & Son.
Joiner—H. Waterhouse & Sons.
Plasterer—F. Robinson.
Plumber—D. Wiggins.
Slater—F. Thompson.
Electrical Installation—The Enterprise Electric Co.

WALTHAMSTOW.—For laying asphalte macadam in Queen Elizabeth-road, Tavistock-avenue, and Pembar-avenue, for the U.D.C. :—
*H. V. Smith & Co.—At 8s. 4d. per yard super.

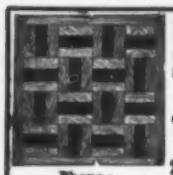
WHITWOOD (YORKS).—For making a new cemetery and lodge, for the U.D.C. Mr. R. A. Easedale, Architect, Castleford :—
Excavator, Bricklayer and Masons—
Wynne & Smith.
Carpenter and Joiner—
G. E. Greaves & Son.
Slater—
W. P. Allison.
Plumber, Glazier and Electrician—
A. Clarkson.
Plasterer—
G. E. Bateson.
Painters—
E. Foster & Sons.
Entrance Walls—
J. A. Rodgers & Sons.
(All of Castleford and Normanton.)
(Accepted subject to Ministry of Health.)

WITHAM.—For erection of 12 semi-detached houses on the Cocks Farm site, for the U.D.C. Mr. W. P. Perkins, surveyor, Collingwood-road, Witham :—

Blade Wenden, Witham	£520
J. D. Dean, Witham	520
*M. Richards & Son, Witham.....	420

YEADON.—For erection of a new picture house in Town-street, for the Newtown Pictures, Ltd. :—
*Mitchell Yeadon & Sons, Whack House-lane, Yeadon, near Leeds.

YORK.—For erection of one block of three houses at Newton-upon-Ouse, for the T.C. Mr. F. W. Spurr, City Engineer, Guildhall, York :—
*W. Fairweather & Son, York..... £1,710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